User Guide

SpectraGuard® Enterprise

An AirTight® Product

A Comprehensive Wireless IPS and Performance Management Solution
Version 6.7 Update 2

AirTight® Networks, Inc.,

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Product documentation is being enhanced continuously based on customer feedback. To obtain a latest copy of this document, visit http://www.airtightnetworks.com/home/support.html

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SpectraGuard® Enterprise

User Guide

END USER LICENSE AGREEMENT

Please read the End User License Agreement before installing SpectraGuard® Enterprise. The End User License Agreement is available at the following location -.http://www.airtightnetworks.com/fileadmin/pdf/AirTight-EULA.pdf.

Installing SpectraGuard® Enterprise constitutes your acceptance of the terms and conditions of the End User License Agreement.

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THIS PRODUCT HAS THE CAPABILITY TO BLOCK WIRELESS TRANSMISSIONS FOR THE PURPOSE OF PROTECTING YOUR NETWORK FROM MALICIOUS WIRELESS ACTIVITY. BASED ON THE POLICY SETTINGS, YOU HAVE THE ABILITY TO SELECT WHICH WIRELESS TRANSMISSIONS ARE BLOCKED AND, THEREFORE, THE CAPABILITY TO BLOCK AN EXTERNAL WIRELESS TRANSMISSION. IF IMPROPERLY USED, YOUR USAGE OF THIS PRODUCT MAY VIOLATE US FCC PART 15 AND OTHER LAWS. BUYER ACKNOWLEDGES THE LEGAL RESTRICTIONS ON USAGE AND UNDERSTANDS AND WILL COMPLY WITH US FCC RESTRICTIONS AS WELL AS OTHER GOVERNMENT REGULATIONS. AIRTIGHT IS NOT RESPONSIBLE FOR ANY WIRELESS INTERFERENCE CAUSED BY YOUR USE OF THE PRODUCT. AIRTIGHT AND ITS AUTHORIZED RESELLERS OR DISTRIBUTORS WILL ASSUME NO LIABILITY FOR ANY DAMAGE OR VIOLATION OF GOVERNMENT REGULATIONS ARISING FROM YOUR USAGE OF THE PRODUCT, EXPECT AS EXPRESSLY DEFINED IN THE INDEMNITY SECTION OF THIS DOCUMENT.

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AirTight will not be liable to customer or any other party for any indirect, incidental, special, consequential, exemplary, or reliance damages arising out of or related to the use of SpectraGuard® Enterprise under any legal theory, including but not limited to lost profits, lost data, or business interruption, even if AirTight knows of or should have known of the possibility of such damages. Regardless of the cause of action or the form of action, AirTight's total cumulative liability for actual damages arising out of or related to the use of SpectraGuard® Enterprise will not exceed the price paid for SpectraGuard® Enterprise.

This product contains components from Open Source software. These components are governed by the terms and conditions of the GNU Public License. To read these terms and conditions visit http://www.gnu.org/copyleft/gpl.html.

This product is protected by one or more of U.S. patent Nos. 7,002,943, 7,154,874, 7,216,365, 7,333,800, 7,333,481, 7,339,914, 7,406,320, 7,440,434, 7,447,184, 7,496,094, 7,536,723, 7,558,253, 7,710,933, 7,751,393, 7,764,648, 7,804,808, 7,856,209, 7,856,656, 7,970,894, 7,971,253, 8,032,939; Australian patent No. 200429804; U.K. patent No. 2410154, Japanese patent No. 4639195 and any others listed at www.airtightnetworks.com/patents. More patents pending.

FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT (Section 15.105)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/ TV technician for help.

CAUTION (Section 15.21)
Any changes or modifications not expressly approved by the guarantee of this device could void the user's authority to operate the equipment.

Labeling requirements (Section 15.19) (a) (3)
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RF exposure warning
This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provide with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

This device is operation in 5.15 – 5.25GHz frequency range, then restricted in indoor use only, Outdoor operations in the 5150~5250MHz is prohibit.
The availability of some specific channels and / or operational frequency bands are country dependent and are firmware programmed at factory to match the intended destination. The firmware setting is not accessible by the end user.
This device is Master equipment, the transmission is disabled in the 5600-5650MHz band.

Canada, Industry Canada (IC) Notices (RSS-Gen section 7.1.3)
This Class B digital apparatus complies with Canadian ICES-003 and RSS-210.
Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Radio Frequency (RF) Exposure Information
The radiated output power of the Wireless Device is below the Industry Canada (IC) radio frequency exposure limits. The Wireless Device should be used in such a manner such that the potential for human contact during normal operation is minimized.
This device has also been evaluated and shown compliant with the IC RF Exposure limits under mobile exposure conditions. (antennas are greater than 20cm from a person's body).

Canada, avis d'Industry Canada (IC)
Cet appareil numérique de classe B est conforme aux normes canadiennes ICES-003 et RSS-210.
Son fonctionnement est soumis aux deux conditions suivantes : (1) cet appareil ne doit pas causer d'interférence et (2) cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement.

Informations concernant l'exposition aux fréquences radio (RF)
La puissance de sortie émise par l'appareil de sans fil est inférieure à la limite d'exposition aux fréquences radio d'Industry Canada (IC).

Utilisez l'appareil de sans fil de façon à minimiser les contacts humains lors du fonctionnement normal.
Ce périphérique a également été évalué et démontré conforme aux limites d'exposition aux RF d'IC dans des conditions d'exposition à des appareils mobiles (les antennes se situent à moins de 20 cm du corps d'une personne).

FCC NOTICE: To comply with FCC part 15 rules in the United States, the system must be professionally installed to ensure compliance with the Part 15 certification. It is the responsibility of the operator and professional installer to ensure that only certified systems are deployed in the United States. The use of the system in any other combination (such as co-located antennas transmitting the same information) is expressly forbidden.
Only the antennas listed below are allowed to be used with the EUT output power.

Antenna List

No.	Manufacturer	Part No.	Peak Gain	Note
1.	JOYMAX	JWX-614XRSXX-361 JWX-614XRSXX-361 JWX-614XRSXX-361	3dBi for 2.4GHz 5dBi for 5.15~5.25GHz 5dBi For 5.25~5.35GHz 5dBi For 5.47~5.725GHz 5dBi for 5.725~5.850GHz	External Antenna (Dipole)
2.	MAG.LAYERS	MSA-3810-2G4C1-B4 MSA-3810-2G4C1-B3 MSA-3810-2G4C1-A37	4.14dBi for 2.4GHz 3.87dBi for 5.15~5.25GHz 3.87dBi For 5.25~5.35GHz 4.76dBi For 5.47~5.725GHz 5.72dBi for 5.725~5.850GHz	Internal Antenna (PIFA)

NOTE: There are two different EUT output power for with ground plane antenna and without ground plane antenna.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

En vertu de la réglementation de l'industrie du Canada, cet émetteur de radio ne peuvent fonctionner en utilisant une antenne d'un type et maximum (ou moins) Gain approuvé pour l'émetteur par Industrie Canada. pour réduire risque d'interférence aux autres utilisateurs, le type d'antenne et son gain doivent être choisis de sorte que la puissance isotrope rayonnée équivalente (PIRE) ne dépasse pas ce qui est nécessaire pour la réussite de communication.

Table Of Contents

Getting Started

Before You Begin

Thank you for purchasing SpectraGuard® Enterprise (referred to as 'system' hereafter in this document) from AirTight® Networks, Inc. The system assists you to effectively monitor, troubleshoot, administer, and protect your wireless network.

Overview and Organization

This user guide gives an overview of the User Interface (referred to as 'Console' hereafter in this document) and helps you familiarize with the following top-level tabs. This guide contains the following chapters.

- **Navigation Bar and Global Functions:** Provides an overview of the various tabs and buttons on the Console.
- **Dashboard Tab:** Provides wireless vulnerability assessment at-a-glance and displays key findings about your wireless deployment's security.
- **Events Tab:** Lists various events generated by the system for your deployment.
- **Devices Tab:** Provides information on wireless devices such as Access Points (APs), Clients, Sensors, and Network Detectors (NDs) visible to the system.
- **Locations Tab**: Enables you to organize your office locations into a hierarchical tree and displays live RF maps for each location.
- **Reports Tab:** Enables you to view predefined reports and create customized reports.
- **Forensic Tab:** Enables you to drill down into the details about detected threats for further analysis of the causes and actions taken.
- **Administration Tab:** Enables you to view and set various policies for your deployment.

License Based Features

Note: *If the following* ***licenses are not applied****, the user will* ***not be able to view the corresponding features*** *on the Console.*

The following features require separate licenses:

1. **SpectraGuard SAFE**
2. **Forensics and Performance Monitoring (both covered under the same license)**
3. Wireless Intrusion Detection System (WIDS)
4. Sensor / AP Combo

The number of sensors that can be converted to AP's is based on your license. To view the exact number, go to **Administration->Global->System Settings->Server** on your server.

How to get more information

To receive important news on product updates, please visit our website at www.airtightnetworks.com

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For technical support, send an email to support@airtightnetworks.com.

Navigation Bar and Global Functions

A Quick Tour of the Console

The Console consists of the following top-level tabs and additional buttons. This section explains how to use the Console navigation bar and global functions.

Navigation Bar

The Console navigation bar includes the following tabs: Dashboard, Events, Devices, Locations, Reports, Forensics, and Administration.

Navigation Bar

The following table describes the items in the navigation bar.

Items in the Navigation Bar

Item No.	Item	Description
1	Dashboard	Provides a summary view of the WLAN environment
2	Events	Lists various Events in the deployed WLAN environment
3	Devices	Provides information on the wireless devices visible to the system
4	Locations	Enables you to organize the network into a list of locations and displays live RF maps for each location node
5	Reports	Enables you to generate various reports based on 802.11 data
6	Forensics	Enables you to drill down into the details about detected threats for further analysis of the causes and actions taken
7	Administration	Enables you to perform various administrative activities
8	Upgrade Available	When displayed, alerts you that a newer version of the system is available
9	Troubleshooting in Progress	When displayed, alerts you that a troubleshooting session is in progress
10	Current Date and Time	Shows the current date and time in the format: Month Date, Hour: Minute AM/PM (Time Zone)
11	Refresh	Refreshes all the panels globally
12	Help	Shows the Help file for the system
13	Legend	Describes the icons used in the system
14	About SpectraGuard Enterprise	Shows product version, license information, details of the patents, and provides access to the license agreement
15	Log Off	Logs out the current user and opens the Login screen

Global Functions

The Console contains several common functions that apply to the Dashboard, Events, Devices, Locations, Reports, Forensics, and Administration tabs.

General

The following functions apply to all screens in the system. On any screen, you can perform the following:

- Resize panes horizontally.
- Scroll only if there is data that overflows the screen.
- Edit some user-defined fields.
- Press the **Tab** or **Enter** key to save changes in dialogs.

Trees

The following functions apply to all trees in the system. In any tree, you can perform the following:

- Click ⊞ to expand the sub nodes.
- Click ⊟ to collapse the sub nodes.
- Double-click the node text to either expand or collapse sub nodes.

Dialogs

The following functions apply to all dialogs in the system. Depending on options available in a particular dialog, you can:

- Click **OK** to save all the changes and close the dialog.
- Click **Cancel** to discard the changes and close the dialog.
- Click **Apply** to save all changes and keep the dialog open.
- Click **Delete** to remove a selected item.
- Click **Close** to close the dialog.
- Click **Restore Defaults** to reset to factory defaults.
- Click  to view more information. Some screens have more than one such icon. Click each of these icons in the relevant sections to view information depicted graphically.

Messages

The following functions apply to all message boxes in the system.
The system divides messages into the following classes:

1. Confirmation: Signals an application level event that needs immediate user input.
2. Error: Signals an application level event, indicating failure of user performed action.
3. Warning: Signals an application level event that needs attention.
4. Information: Signals an informational event that may not need immediate action.

For all informational messages, click the 

button to close the message.
For all messages that require a **Yes** or **No**, you can:
Click **OK** for **Yes**.
Click **Cancel** for **No**.

Behavior of SpectraGuard Enterprise Servers managed through SpectraGuard Manager

Introduction

The behavior of the SpectraGuard Enterprise servers that are managed through SpectraGuard Manager, is slightly different from the SpectraGuard Enterprise servers that are managed individually. Version 6.6 onwards, SpectraGuard Managed Network Console (SpectraGuard -MNC) has been renamed as SpectraGuard Manager. SpectraGuard Manager facilitates the centralized management of multiple SpectraGuard Enterprise servers, that could be placed at different locations of the enterprise.

If you are not using SpectraGuard Manager to manage the SpectraGuard Enterprise servers in your enterprise, you can ignore this chapter.

Inheriting Policies on the Root location of SpectraGuard Enterprise Server

When the SpectraGuard Enterprise servers in your enterprise are managed through SpectraGuard Manager, SpectraGuard Manager pushes the local policies on to the **Root** location of each of the SpectraGuard Enterprise servers. The locations under **Root** location of the SpectraGuard Enterprise server are not affected in any way.

When a SpectraGuard Enterprise server in the enterprise has been added to a group in SpectraGuard Manager, the SpectraGuard Manager pushes the local policies defined for that group, to the **Root** location of the SpectraGuard Enterprise server. Such policies are said to be inherited by the SpectraGuard Enterprise server from the SpectraGuard Manager. The inherited policies cannot be edited or deleted from the SpectraGuard Enterprise Console. Such policies can only be viewed and applied through the SpectraGuard Enterprise Console.

Effect on inherited policies and templates on disassociation from SpectraGuard Manager

The process of pushing the local policies to a SpectraGuard Enterprise server through SpectraGuard Manager can happen multiple times. In such cases, the most recently pushed policies would be implemented by or applied on the SpectraGuard Enterprise servers. The previously inherited local policies that are not in use, would be retained by the SpectraGuard Enterprise server.

If a SpectraGuard Enterprise server disassociates itself from the SpectraGuard Manager managing it, the inherited policies and templates that are currently in use, are retained and used by the SpectraGuard Enterprise server. They can now be edited and deleted from the SpectraGuard Enterprise Console at the **Root** location, as they are independent of SpectraGuard Manager. This operation can be performed only by a superuser.

The inherited policies and templates that are no longer in use, will automatically get deleted from SpectraGuard Enterprise.

Dashboard Tab

Introduction: Panel Displaying WLAN Snapshot

The **Dashboard** screen enables you to view a snapshot of your WLAN security status and performance. The **Security** snapshot is provided in terms of overall security status, security events and charts, quarantine activity status and category-wise device summary. The **Performance** snapshot presents a summary of performance events based on severity, performance event charts, and latest trends in factors contributing to performance issues.

Dashboard Screen

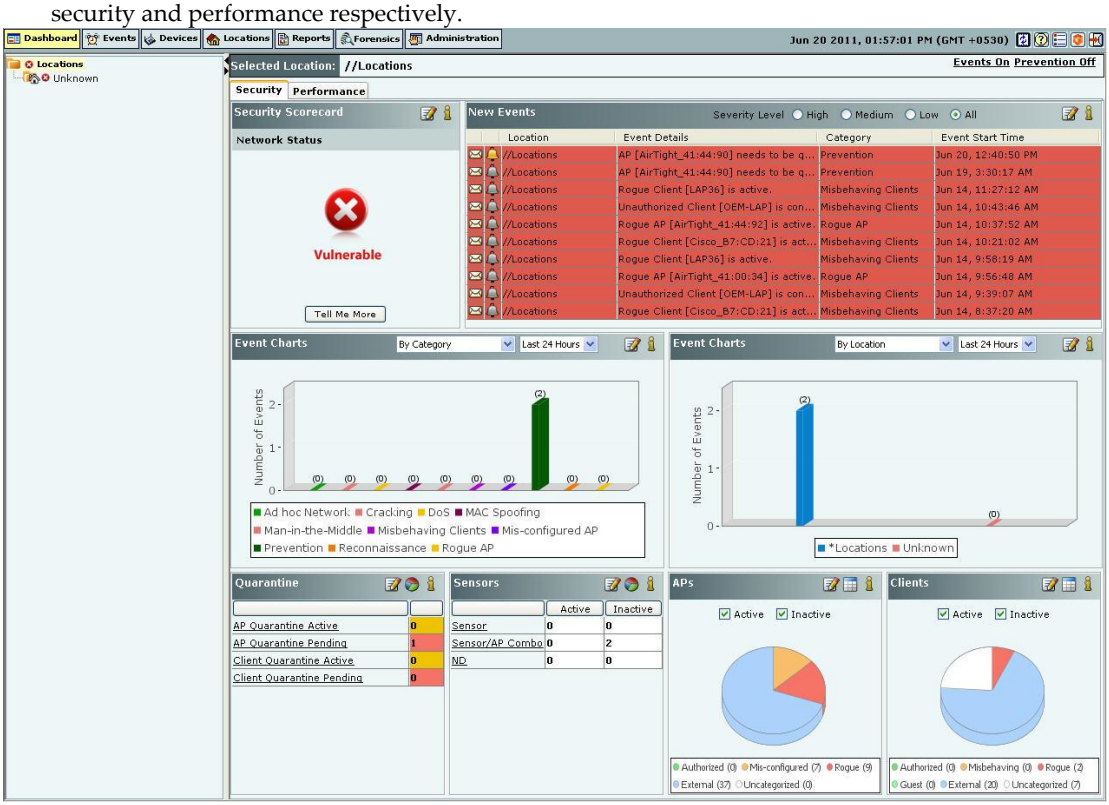
The Dashboard appears by default when you log into the system. You can return to the Dashboard from other screens by clicking the **Dashboard** tab.

The Dashboard screen includes two panes:
On the left, the **Location** tree is seen.
On the right,

- **Selected Location** shows the path for the location selected in the Location tree.
- **Events On/Off and Prevention On/Off** indicate whether Event Generation and Intrusion Prevention have been turned *ON* or *OFF* at a selected location. Clicking **Events On/Off** opens the **Administration->Local->Location Properties->Event Activation** screen. Clicking **Prevention On/Off** opens the **Administration->Local->Location Properties->Intrusion Prevention Activation** screen.

***Note: Prevention On/Off** is **not** visible if **WIDS** license is applied.*

- **Security** and **Performance** Dashboard depict a macro view and statistical information of your WLAN security and performance respectively.



Security Dashboard

Dashboard: Location Tree

The Location tree shows the complete list of locations created for your WLAN in the system. Vulnerability status icon before each location name shows the vulnerabilty status of that location. To view the Dashboard for a particular location, select the appropriate node in the Location tree.

Security Dashboard: Sections

Security Dashboard screen appears by default when you log into the system. Alternatively, click the **Security** tab on the Dashboard screen to view the Security Dashboard. The Security Dashboard consists of the following Information Widgets.

- Security Scorecard
- New Events
- Security Event Charts
- Quarantine
- Sensors
- APs
- Clients

Security Dashboard – Security Scorecard

The **Security Scorecard** shows the overall security status of the WLAN at the selected location.

Security Dashboard – Security Scorecard Section

Your WLAN can be in either of the following states:

- **Secure:** The selected location is treated as Secure if
  - No security events are raised at that location and its child locations, or
  - The Vulnerability checkbox has the following purpose (see Event Settings, Configuration). If the checkbox is checked, the event type in question will contribute to the security vulnerability check. To remove a particular instance of an event from the scorecard, the administrator can click <**Remove from Scorecard**> and uncheck the **Participate from Vulnerability** checkbox. Note that only that instance of the event will stop contributing to the scorecard. All other event instances of the said event type will continue to contribute to the vulnerability status.
- **Vulnerable:** The selected location is treated as vulnerable if any events, which contribute to vulnerability status, are raised.

You can customize the list of events that cause the network to be vulnerable by changing the types of events that contribute to that status. Read/Unread/Acknowledge status of the events do not contribute to the Vulnerability status.

Configuring Security Scorecard View

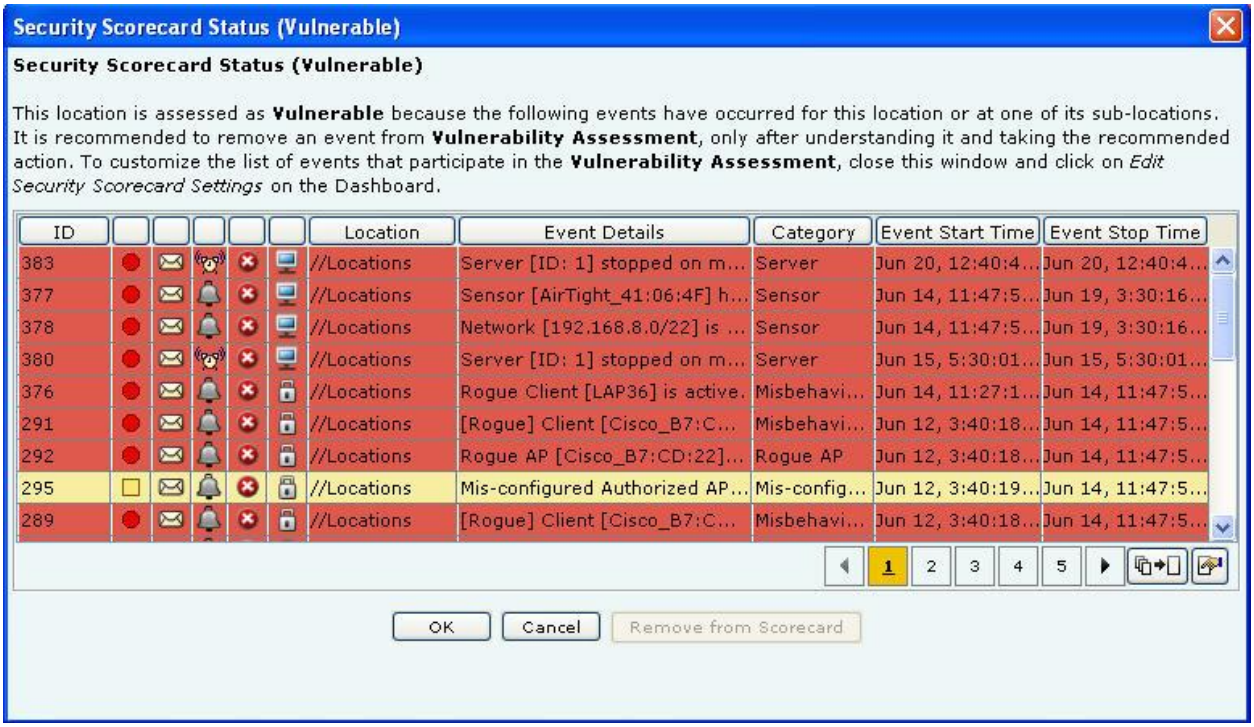
To specify the types of events that are considered when determining the **Security Scorecard** status at a particular location, select a location in the Location tree and then click the icon to open **Administration->Local->Local Policies->Event Settings->Configuration** screen with **Security** tab selected. Refer to the Event Settings, Configuration section in the **Administration** tab for more details. Check/Uncheck the Vulnerability field of the Security Event Types that you want to be considered/not considered for computation of the vulnerability status of a location.

Note: Configuring Security Scorecard, New Events, Event Charts, Quarantine, Sensors, APs, and Clients *sections are* ***not*** *visible if* ***WIDS*** *license is applied.*

Network Status: Tell Me More

To view more information about the actual events that contributed to the **Vulnerable** or **Secure** status of a particular location, select a location in the Location tree and then click <**Tell Me More**> in the Security Scorecard. Based on the security status of the location, a dialog describing the reason for the security status appears as shown below. **Secure Location Dialog** appears when a location is **Secure**, whereas **Vulnerable Location Dialog** appears when the security state is **Vulnerable.**

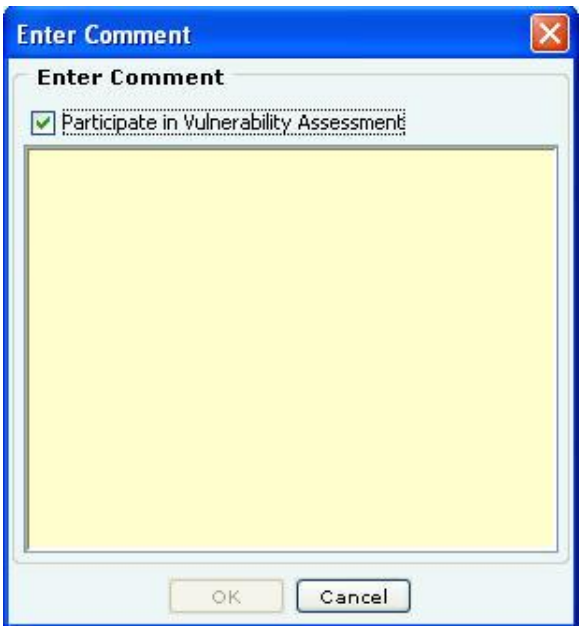
Secure Location Dialog



Vulnerable Location Dialog

If the location is vulnerable, the **Vulnerable Location Dialog** shows the actual events that occurred in your network which contributed to the Vulnerable status of the location. It is possible that you have taken action on the devices after an event displayed in this list occurred, to address the security vulnerability. In that case, you can select such an

event from the **Vulnerable Location** dialog and click **<Remove from Scorecard>** to remove it from the consideration for vulnerability status. The system shows the **Remove from Scoreboard** dialog which allows you take the removal action and add a comment to mark that action before removing it from set of events that contributed to vulnerability.



Remove from Scoreboard Dialog

Uncheck the **Participate in Vulnerability Assessment** check box and enter the text to acknowledge the event, so that the system does not consider this event occurrence in the future while computing the **Vulnerable** status.

Security Dashboard – New Events

New Events section lists the ten recent **Security** events in descending order of start time of the event. This list includes instantaneous as well as live/expired security events. The events are listed based on the Severity Level selected: **High, Medium, Low,** or **All**.

New Events — Severity Level: High | Medium | Low | All

Location	Event Details	Category	Event Start Time
//Locations	AP [AirTight_41:44:90] needs to be q...	Prevention	Jun 20, 12:40:50 PM
//Locations	AP [AirTight_41:44:90] needs to be q...	Prevention	Jun 19, 3:30:17 AM
//Locations	Rogue Client [LAP36] is active.	Misbehaving Clients	Jun 14, 11:27:12 AM
//Locations	Unauthorized Client [OEM-LAP] is con...	Misbehaving Clients	Jun 14, 10:43:46 AM
//Locations	Rogue AP [AirTight_41:44:92] is active.	Rogue AP	Jun 14, 10:37:52 AM
//Locations	Rogue Client [Cisco_B7:CD:21] is act...	Misbehaving Clients	Jun 14, 10:21:02 AM
//Locations	Rogue Client [LAP36] is active.	Misbehaving Clients	Jun 14, 9:58:19 AM
//Locations	Rogue AP [AirTight_41:00:34] is active.	Rogue AP	Jun 14, 9:56:48 AM
//Locations	Unauthorized Client [OEM-LAP] is con...	Misbehaving Clients	Jun 14, 9:39:07 AM
//Locations	Rogue Client [Cisco_B7:CD:21] is act...	Misbehaving Clients	Jun 14, 8:37:20 AM

Security Dashboard – New Events Section

You can select an event row from this list and double-click to see the event details screen. Refer to the Viewing Events Lists section in the **Events** tab for more details. Select an event row and right click to open a context sensitive menu of actions that can be taken on that event. Refer to the Events Context-Sensitive Menu section in the **Events** tab for more details.

Configuring New Events View

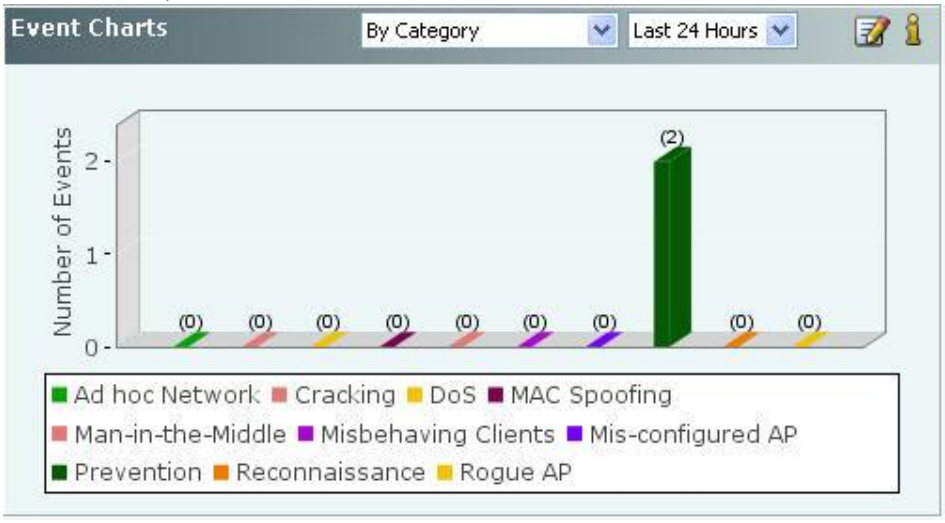
Clicking the icon in the New Events section takes you to **Administration->Local->Local Policies->Event Settings->Configuration** screen with **Security** tab selected. This allows you to change the settings of Event types to control which type security events are displayed at the current location. If you want to change an event configuration at some other location, then select that location in the Location tree and then click the icon.

Security Dashboard – Event Charts

The system shows two Event Charts on the Security Dashboard. The event drop-down list allows you to focus on security events (by location or category), or on APs/Wi-Fi Clients having security events. The time period drop-down list allows you to focus on the last 48 hours or a choice of interval in the last 24 hours. The availability of two charts on the Security Dashboard improves your ability to efficiently notice and handle security issues, if any.

The details of the charts displayed based on the drop-down list are as follows:

1. The drop-down list of events or devices to show on the chart contains the following:
   - **By Location:** Displays a bar chart with a count of Security events for the selected location and its immediate child locations (The selected location is marked with * in the legend of the chart). In order to jump to the security events at one of these locations, click on the bar for that location. You will be taken to the Events ->Security ->All screen for that location and that location will be selected in the location tree panel as well.
   - **By Category:** Displays a bar chart with a count of Security events for each security event category at the current location. In order to jump to the security events of a specific category, click on the bar for that category. You will be taken to the **Events->Security->Selected category** screen.
   - **Top 5 APs by Events:** Displays a bar chart for the top 5 APs based on the number of Security events. On clicking on any bar, the **AP Details** dialog for the corresponding AP device opens with the **Events** tab selected. This allows you to view all the events related to that AP and take appropriate actions.
   - **Top 5 Clients by Events:** Displays a bar chart for the top 5 Clients based on the number of Security events. On clicking any bar, the **Client Details** dialog for the corresponding Client device opens with the **Events** tab selected. This allows you to view all the events related to that Client device and take appropriate actions.
2. The drop-down list for time period allows you to control the chart display based on security events that occurred in the chosen period. The time period choices available are: **Last 4 Hours, Last 12 Hours, Last 24 Hours, or Last 48 Hours.**



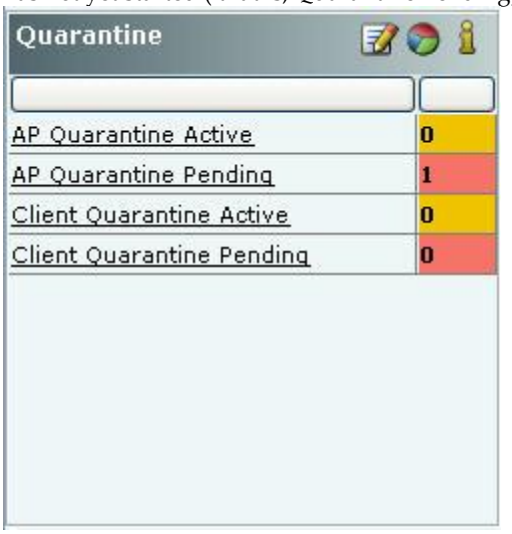
Security Dashboard – Event Charts

Configuring Security Dashboard – Event Charts View

Clicking the icon in the Event Charts section takes you to **Administration->Local->Local Policies->Event Settings->Configuration** screen with the **Security** tab selected. This allows you to change the settings of Event types to control which type security events are displayed at the current location. If you want to change event configuration at some other location, then select that location in the Location tree and then click the icon.

Security Dashboard – Quarantine

Based on the Intrusion Prevention Policy, the system can proactively block an AP or a Client and automatically protect the network against various wireless security threats.
The Quarantine section of the Security Dashboard provides a summary of quarantine activities being carried out by the system. The Quarantine section shows a count of APs (for Merged APs the count of BSSIDs in quarantine are shown) and Clients that are being blocked, (that is, Quarantined), as well as a count of APs (for Merged APs the count of BSSIDs in quarantine are shown) and Clients that are identified to be quarantined, but the Quarantine action has not yet started (that is, Quarantine Pending).

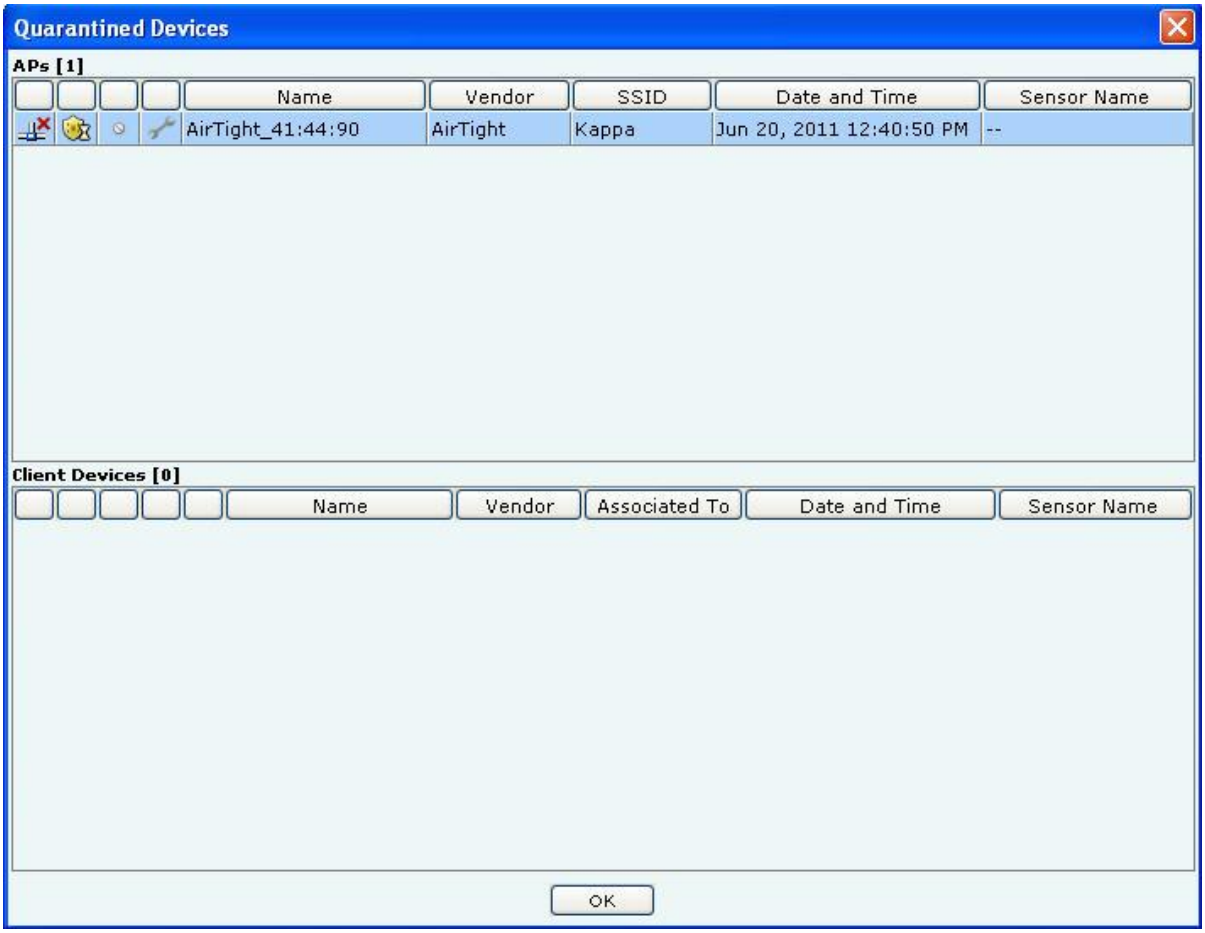


Security Dashboard – Quarantine Section – Table View

Viewing Quarantined Devices – Table View

To view a list of APs and Clients with status Quarantine Active or Quarantine Pending, click the following hyperlinked text in the Quarantine section:

- AP Quarantine Active
- AP Quarantine Pending
- Client Quarantine Active
- Client Quarantine Pending

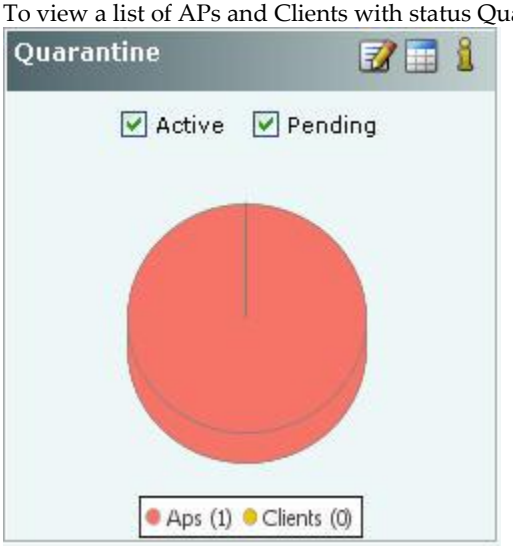


List of Quarantined APs and Clients

*Note: Viewing Quarantined Devices – Table/Pie Chart View section is **not** visible if **WIDS** license is applied.*

Viewing Quarantined Devices – Pie Chart View

To view a list of APs and Clients with status Quarantined or Quarantine Pending in pie chart form, click the icon.



Security Dashboard – Quarantine Section – Pie Chart View

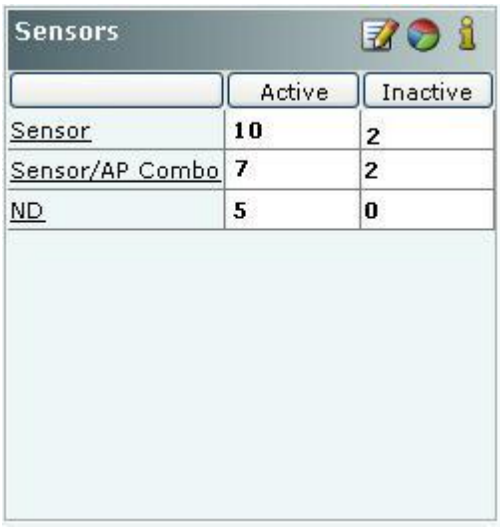
Select Active, Pending, or both the checkboxes to control the pie chart contents. Click the area in the pie chart or on the names that are hyperlinked (appearing in the legends below the pie chart) to see all the quarantine sessions.

Configuring Intrusion Prevention Policy

Clicking on the in the Quarantine section of Security Dashboard opens the **Administration->Local->Operating Policies->Intrusion Prevention** screen. This allows you to edit the Intrusion Prevention Policy and the Intrusion Prevention Level for the selected location. If you want to change this policy for a different location, you can select that location in the Location tree and then click the icon. Refer to the Intrusion Prevention section in the **Administration** tab for more details.

Security Dashboard – Sensors

The **Sensors** section displays a count of Active and Inactive Sensors, Sensor-AP combo devices(Sensor/AP), and Network Detectors (ND).



Security Dashboard – Sensors Section – Table View

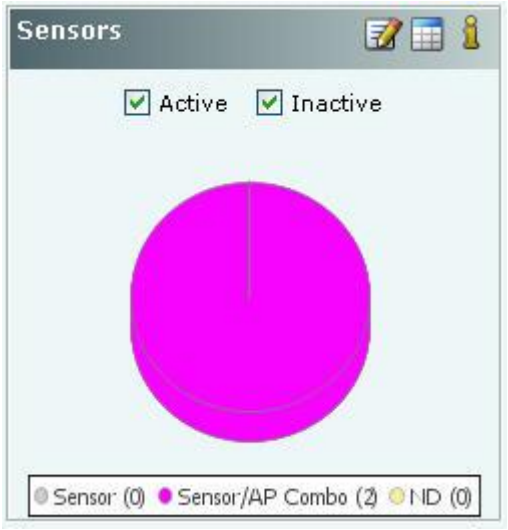
Viewing Sensors – Table View

To view the details of the Sensor, Sensor/AP combo, or ND devices, click the following hyperlinked text in the Sensors section:

- Sensor
- Sensor/AP
- ND

Viewing Sensors – Pie Chart View

To view the Sensors information in pie chart form, click the icon.



Security Dashboard – Sensors Section – Pie Chart View

Select **Active, Inactive,** or both the checkboxes to view the active/inactive Sensors. Clicking on any area in the pie chart takes you to the **Devices→Sensors** screen.

Editing Sensor Configuration

To access device Configuration editing functionality from the Dashboard, click the icon to open the **Administration->Local->Local Policies->Device Template** screen at the selected location. To edit the device configuration for another location, select that location in the Location tree and then click the icon. Refer to the Device Template section in the Administration tab for more details.

Security Dashboard – APs

The APs section enables you to view lists of all the Active and Inactive APs that belong to a certain category (Authorized, Mis-configured, Rogue, External). APs that do not belong to any category based on their wired status and AP classification policy are treated as Uncategorized.

Security Dashboard – APs Section – Table View

Entries are color coded according to their classification:

- Authorized is denoted by green color
- Mis-configured is denoted by orange color

- Rogue is denoted by red color
- External is denoted by blue color
- Uncategorized is denoted by white color

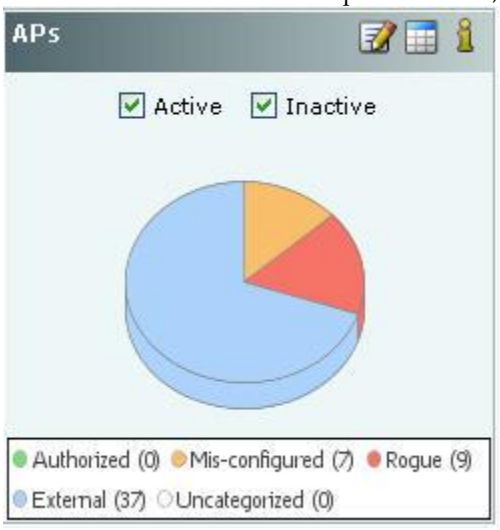
Viewing APs – Table View

To view the AP information, click the following hyperlinked text in the APs section:

- **Authorized:** Click on **Authorized**, the **Devices->APs->Categorized->Authorized** screen opens.
- **Mis-configured:** Click on **Mis-configured**, the **Devices->AP->Categorized->Authorized** screen opens.
- **Rogue:** Click on Rogue, the **Devices->APs->Categorized->Rogue** screen opens.
- **External:** Click on External, the **Devices->AP->Categorized->External** screen opens.
- **Uncategorized:** Click on **Uncategorized, the Devices->APs->Uncategorized** screen opens

Viewing APs – Pie Chart View

To view the APs information in pie chart form, click the icon.



Security Dashboard – APs Section – Pie Chart View

Select **Active,Inactive,** or both the checkboxes to view the active/inactive APs. Click the area in the pie chart; the **Devices->APs->Selected category** screen opens.

Editing AP Auto-classification Policy

To edit the AP Auto-classification policy at selected location, click the icon to open the **Administration->Local->Local Policies->Operating Policies→AP Auto-classification** screen. To edit the AP classification policy at another location, select that location in the Location tree and then click the icon. Refer to the AP Auto-classification section in the Administration tab for more details.

Security Dashboard – Clients

The **Clients** section enables you to view lists of all the **Active** and **Inactive** Clients that belong to a certain category (Authorized, Misbehaving, Rogue, External, Guest, and Uncategorized).Clients that do not belong to any category based on their association status and Client classification policy settings are classified as **Uncategorized**.

The Clients section of Security Dashboard also shows you the Ad hoc networks seen in your environment.

Security Dashboard – Clients Section – Table View

Entries are color coded according to the specified classification policies:

- Authorized is denoted by green color
- Misbehaving is denoted by orange color
- Rogue is denoted by red color
- Guest is denoted by light green color
- External is denoted by blue color
- Uncategorized is denoted by white color

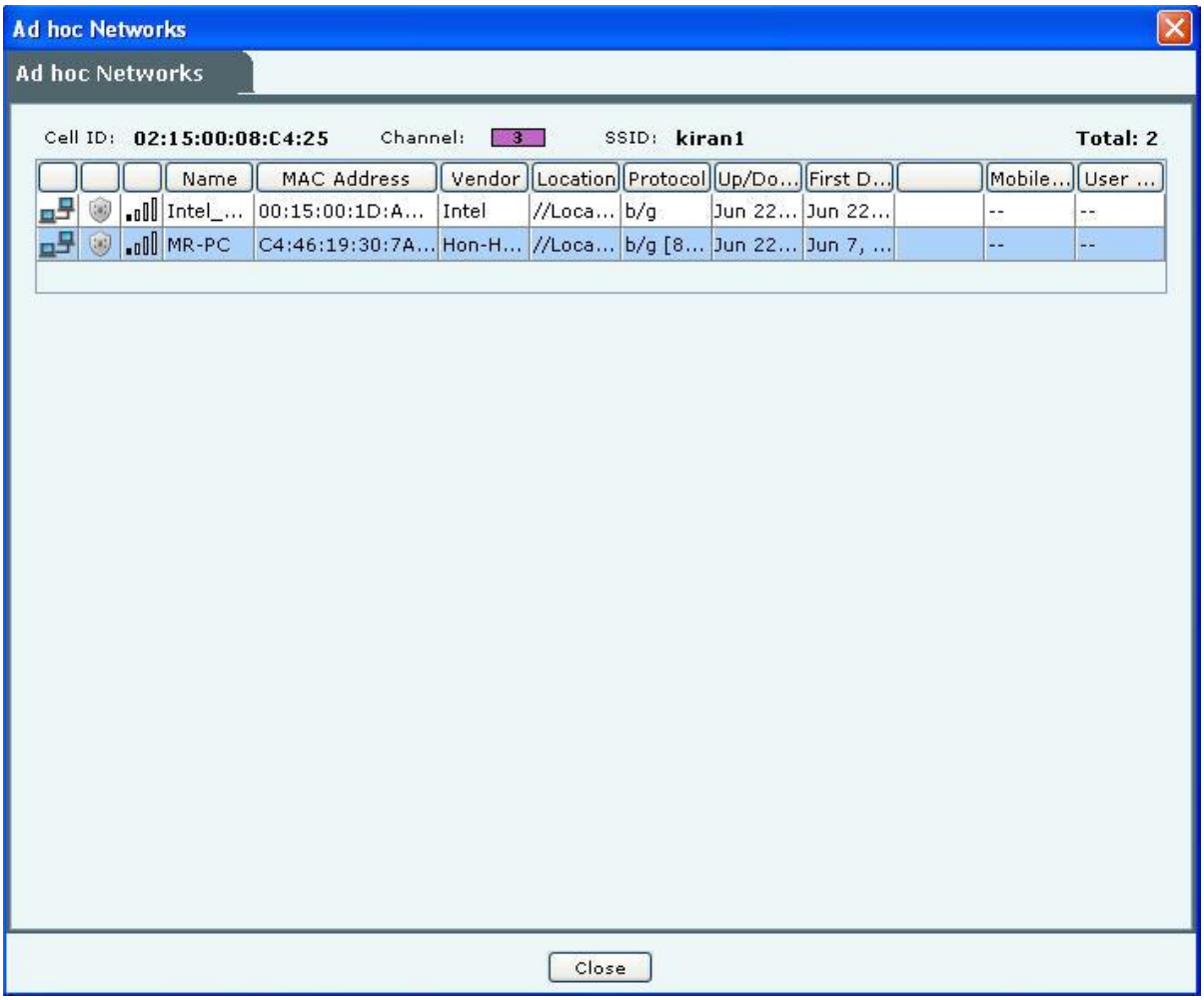
The **Ad hoc Networks** sub-section in the **Clients** section displays all peer-to-peer wireless, that is, ad hoc connections between wireless devices in the network.

Clients – Ad hoc Networks Section

Viewing Clients – Table View

To view the Client information, click the following hyperlinked text in the Clients section:

- **Authorized:** Click on Authorized, the **Devices->Clients->Categorized->Authorized** screen opens.
- **Misbehaving:** Click on Authorized, the **Devices->Clients->Categorized->Authorized** screen opens.
- **Rogue:** Click on Authorized, the **Devices->Clients->Categorized->Rogue** screen opens.
- **Guest:** Click on Authorized, the **Devices->Clients->Categorized->Guest** screen opens.
- **External:** Click on Authorized, the **Devices->Clients->Categorized->External** screen opens.
- **Uncategorized:** Click on Uncategorized, the **Devices->Clients->Uncategorized** screen opens. New Clients that do not belong to any category based on their association status and Client classification policy settings appear under **Clients** as **Uncategorized Clients**. The system cannot determine whether these Clients are authorized or unauthorized. You should manually inspect and move these Clients to the appropriate Client folder.
- **BSSIDs:** Click on BSSIDs, list of ad hoc networks and the details of the devices in these ad hoc networks screen appears.



List of Ad hoc Connections

Viewing Clients – Pie Chart View

To view the Clients information in pie chart form, click the icon.

Security Dashboard – Clients Section – Pie Chart View

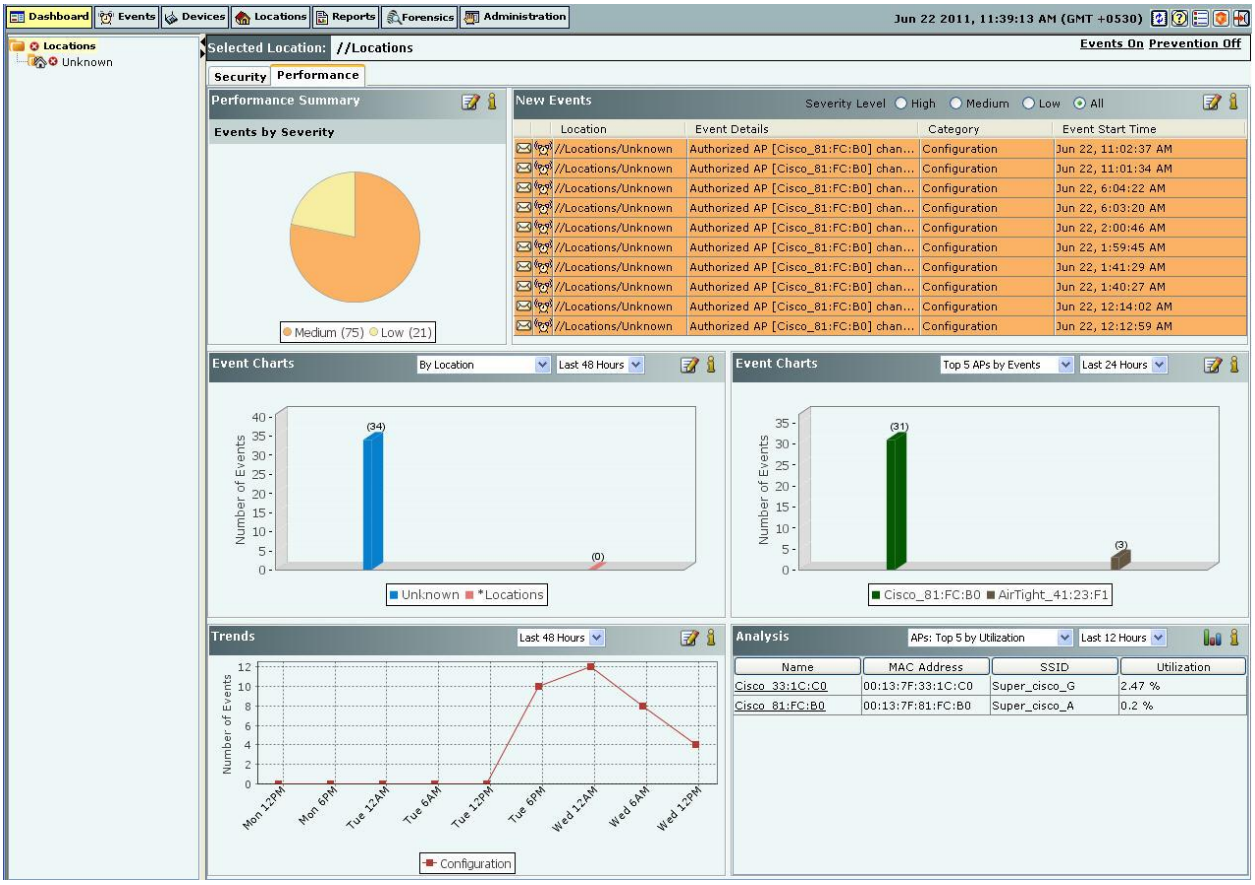
Select Active, Inactive, or both the checkboxes to view the active/inactive Clients. Click the area in the pie chart; the **Devices->Clients->Selected category** screen opens.

Editing Client Auto-classification Policy

To edit the Client Auto-classification policy at selected location, click the icon to open the **Administration->Local->Local Policies->Operating Policies->Client Auto-classification** screen. To edit the Client classification policy at another location, select that location in the Location tree and then click the icon. Refer to the Client Auto-classification section in the Administration tab for more details.

Performance Dashboard: Sections

The **Performance Dashboard** screen appears by clicking the **Performance** tab on the Dashboard screen.



Performance Dashboard

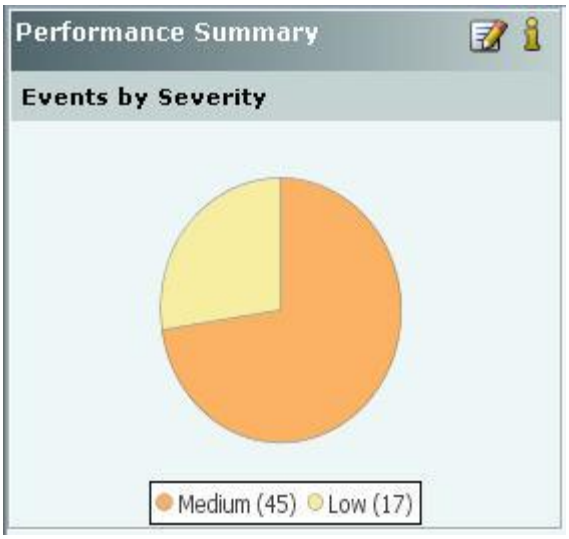
The Performance Dashboard screen consists of the following Information Widgets:

- Performance Summary
- New Events
- Performance Event Charts
- Trends
- Analysis

Performance Dashboard – Performance Summary

The **Performance Summary** displays the overall performance information of the Wi-Fi environment at selected location. This summary is presented as a pie chart of performance related events based on the Severity of these events.

While keeping the mouse on an area of the pie chart shows you the number of events of the corresponding category, Clicking anywhere in the pie chart takes you to the **Events->Performance tab** screen showing future details of events at the selected location.



Performance Dashboard – Performance Summary Section

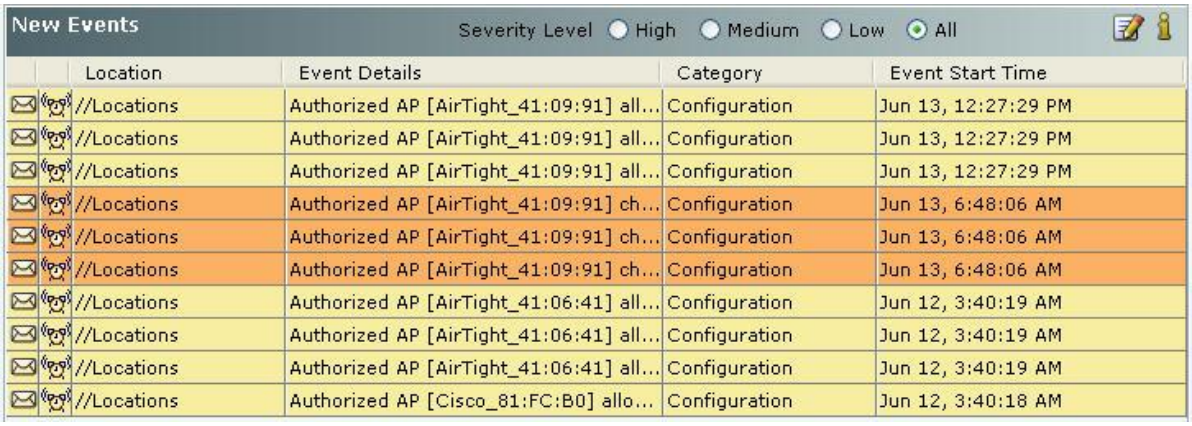
Configuring Performance Dashboard – Performance Summary View

The events considered for showing the pie chart in Performance Summary are those which are selected for Display in the Event Settings at the selected location. In order to change the Event Settings at the selected location, click the icon. This will open the **Performance** tab of the **Administration->Local->Local Policies->Event Settings->Configuration** screen at the selected location where you can directly modify the Display settings of the performance events. Refer to the Event Settings, Configuration section in the **Administration** tab for more details.

Note: *Configuring Performance Summary, New Events, Events Chart, Trends, and Analysis sections are* ***not*** *visible if WIDS license is applied.*

Performance Dashboard – New Events

The **New Events** section lists the ten recent **Performance** events in descending order of the start time of the event. This list includes instantaneous as well as live/expired performance events. The events are listed based on the Severity Level selected: **High, Medium, Low,** or **All**.



Location	Event Details	Category	Event Start Time
//Locations	Authorized AP [AirTight_41:09:91] all...	Configuration	Jun 13, 12:27:29 PM
//Locations	Authorized AP [AirTight_41:09:91] all...	Configuration	Jun 13, 12:27:29 PM
//Locations	Authorized AP [AirTight_41:09:91] all...	Configuration	Jun 13, 12:27:29 PM
//Locations	Authorized AP [AirTight_41:09:91] ch...	Configuration	Jun 13, 6:48:06 AM
//Locations	Authorized AP [AirTight_41:09:91] ch...	Configuration	Jun 13, 6:48:06 AM
//Locations	Authorized AP [AirTight_41:09:91] ch...	Configuration	Jun 13, 6:48:06 AM
//Locations	Authorized AP [AirTight_41:06:41] all...	Configuration	Jun 12, 3:40:19 AM
//Locations	Authorized AP [AirTight_41:06:41] all...	Configuration	Jun 12, 3:40:19 AM
//Locations	Authorized AP [AirTight_41:06:41] all...	Configuration	Jun 12, 3:40:19 AM
//Locations	Authorized AP [Cisco_81:FC:B0] allo...	Configuration	Jun 12, 3:40:18 AM

Performance Dashboard – New Events Section

You can select an event row from this list and double-click to see the event details screen. Refer to the Viewing Events Lists section in the Events tab for more details. Select an event row and right click to open a context sensitive menu of actions that can be taken on that event. Refer to the Events Context-Sensitive Menu section in the Events tab for more details.

Configuring Performance Dashboard – New Events View

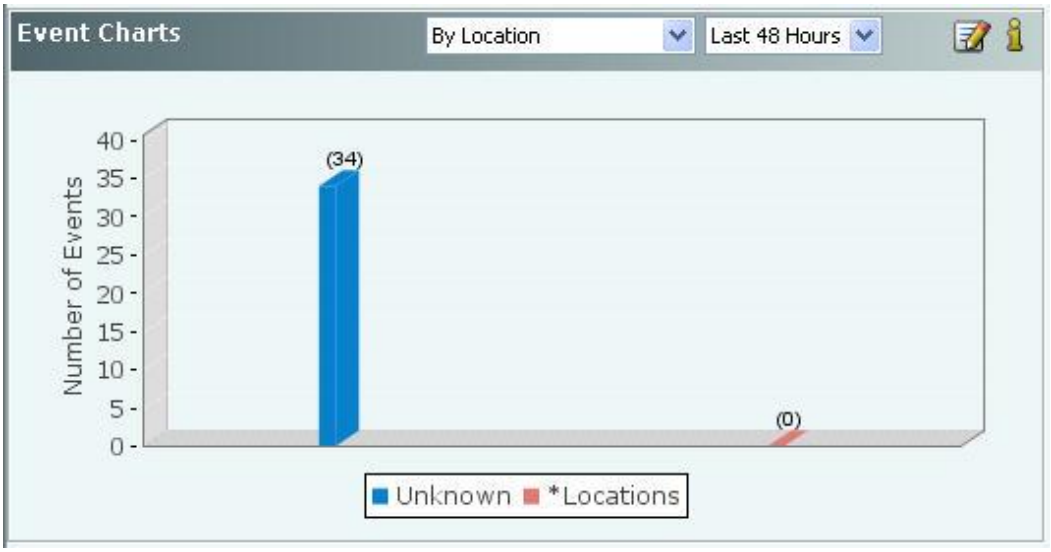
Select a location in the Location tree and then click the  icon to open **Administration->Local->Local Policies->Event Settings->Configuration** screen with **Performance** tab selected.

Performance Dashboard – Event Charts

The system shows two Event Charts on the Performance Dashboard. The event drop-down list allows you to focus on events (by location or category), or on APs or Wi-Fi Clients experiencing performance issues. The time period drop-down list allows you to focus on the last 48 hours or a choice of interval in the last 24 hours. The availability of two charts on the Performance Dashboard improves your ability to efficiently notice and handle performance issues, if any.

The details of the charts displayed based on the drop-down list are as follows:

1. The drop-down list of events or devices to show on the chart contains the following:
    - **By Location**: Displays a bar chart for a count of performance events for the selected location and its immediate child locations. (The selected location is marked with * in the legend of the chart). In order to jump to the performance events at one of these locations, click on the bar for that location. You will be taken to the **Events->Performance->All** screen for that location and that location will be selected in the location tree panel as well.
    - **By Category:** Displays a bar chart for a count of performance events at the selected location based on their category. In order to jump to the performance events of a specific category, click on the bar for that category. You will be taken to the **Events->Performance->Selected category** screen.
    - **Top 5 APs by Events:** Displays bar graph for the top 5 APs based on the number of Performance events involving these APs. On clicking one of the bars, the **AP Details** dialog for the corresponding AP device opens with **Events** tab selected. This allows you to view all the events related to that AP and take appropriate actions.
    - **Top 5 Clients by Events:** Displays bar graph for the top 5 Clients based on the number of Performance events involving these Clients. On clicking one of the bars, the **Client Details** dialog for the corresponding Client device opens with **Events** tab selected. This allows you to view all the events related to that Client device and take appropriate actions.
2. The drop-down list for time period allows you to control the chart display based on performance events that occurred in the chosen period. The time period choices available are: **Last 4 Hours, Last 12 Hours, Last 24 Hours,** or **Last 48 Hours.**



Performance Dashboard – Event Charts

Configuring Performance Dashboard – Event Charts View

Select a location in the Location tree and then click the icon to open **Administration->Local->Local Policies->Event Settings->Configuration** screen with **Performance** tab selected.

Performance Dashboard – Trends

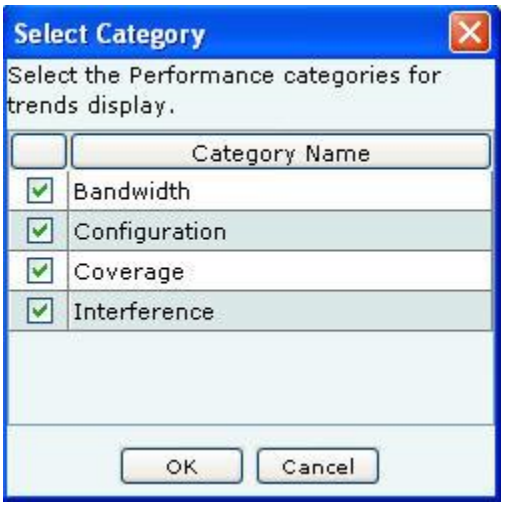
Trends section of the Performance Dashboard displays line charts based on the category of performance events at the selected location for a chosen period of time. The choices of time period for the chart display are: **Last 4 hours**, **Last 12 hours**, **Last 24 hours**, or **Last 48 hours.** These choices are available in the form of a drop-down list as shown in the figure below.

Performance Dashboard – Trends Section

Note: *Live events could be counted in multiple time slots that overlap with the event time, whereas Instantaneous events are counted* ***only*** *in the time slot in which they occurred.*

Configuring Performance Dashboard – Trends View

To specify the types of performance events that should be shown in the **Trends** at the selected location, click the icon in the Trends section. This opens the Select Category dialog shown below. Select the categories to be displayed by clicking the checkbox next to it in the **Select Category** dialog and click **OK**.

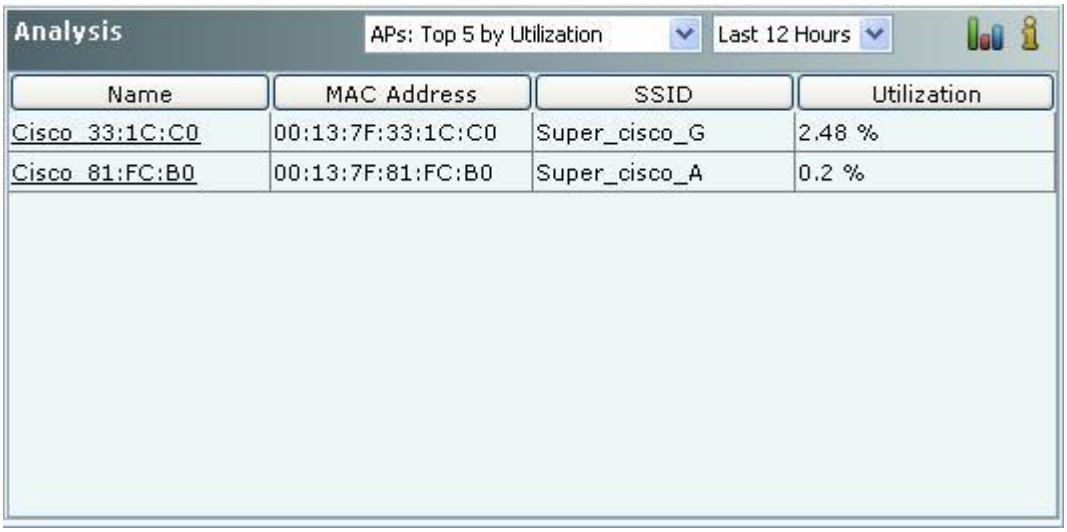


Trends – Select Category

Performance Dashboard – Analysis

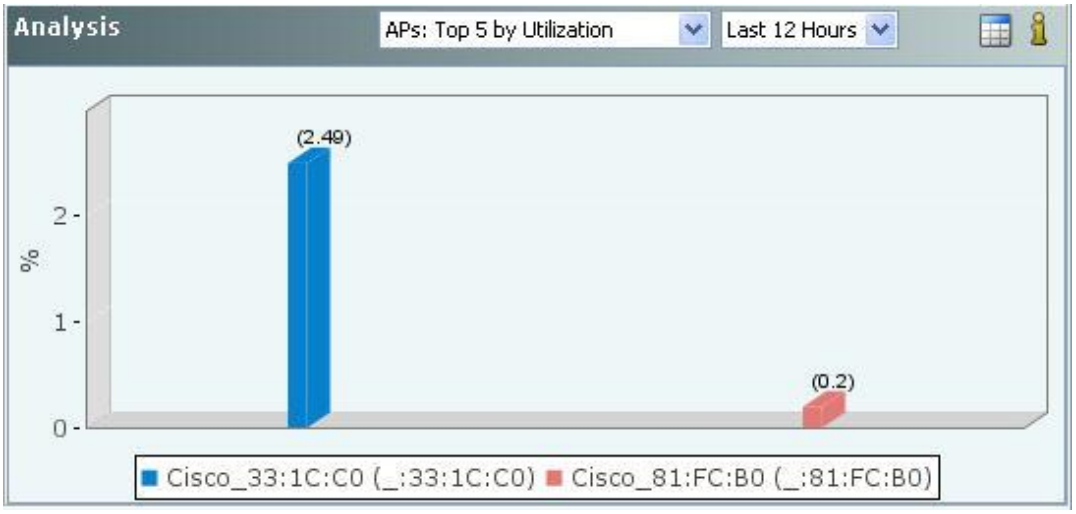
Top and bottom wireless activity analysis at the selected location is shown here for APs, Clients, and Sensors. Sensor records various performance parameters in the wireless network and sends performance records to server periodically for aggregation/correlation. These recorded performance parameters are rendered as Performance Monitoring Graphs in the Device Details.

The top/bottom analysis is provided based on the performance monitoring graphs described above. The rank of a device for any performance parameter is computed based on average value of that parameter over the selected time interval.



Performance Dashboard – Analysis Section – Table View

To view the Analysis information in form of a bar chart, click the icon.



Performance Dashboard – Analysis Section – Bar Graph view

Performance parameters are computed based on detections by a channel-rotating Sensor during the time it, samples a particular channel. Such sampled data is typically well representative of parameters which are averages (for example, average data rate), ratios (for example, utilization) or slow varying (for example, associated Clients, active APs, active Clients). For parameters which are absolute values (for example, traffic), the sampled data typically underestimates the actual value. Time interval of periodic data collection/sampling is 15 minutes.

Details of various parameters in the Analysis section are provided below.

Table 2 Device Type and dropdown available on the Analysis Section

Device Type	Dropdown Available	Table columns	Description	For details
APs	Top/Bottom 5 by Associated Clients	Name, MAC Address, SSID, Associations	Refer to Fields in the AP Performance Tab section for details	Click on the **AP Names** appearing in the Name column in the Table View or click the Bar Graph in the Bar Graph View, the **AP Details** screen opens with **Performance** tab selected
	Top/Bottom 5 by Data Rate	Name, MAC Address, SSID, Data Rate		
	Top/Bottom 5 by Average Traffic	Name, MAC Address, SSID, Traffic		
	Top/Bottom 5 by Utilization	Name, MAC Address, SSID, Utilization		
Clients	Top/Bottom 5 by Data Rate	Name, Data Rate	Refer to Fields in the Client Performance Tab section for details	Click on the **Client Names** appearing in the Name column in the Table View or click the Bar Graph in the Bar Graph View, the **Clients Details** screen opens with **Performance** tab selected
	Top/Bottom 5 by Traffic	Name, Traffic		
Sensors	Top/Bottom 5 by Active APs	Name, Channel Number, Bandwidth, APs	Refer to Fields in the Sensor Performance Tab section for details	Click on the **Sensor Names** appearing in the Name column in the Table View or click the Bar Graph in the Bar Graph View, the **Sensor Details** screen opens with **Performance** tab selected
	Top/Bottom 5 by Active Clients	Name, Channel Number, Bandwidth, Clients		
	Top/Bottom 5 by Interference	Name, Channel Number, dBm		

Dashboard Tab – User Saved Settings

The following User choices made during browsing of Dashboard Tab are saved by the system:
All the options that the user can select that is, Table/Pie chart, Time Filters, drop-down list, radio buttons, check boxes for all sections displayed on Performance and Security Dashboard
These settings are saved on log out as well as movement to other tabs on the Console.

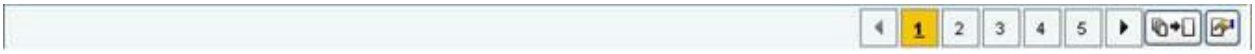
Events Tab

Events: Panel Displaying Alerts

The **Events** screen provides information about events generated by the system. The system classifies events into the following types: **Security, System,** and **Performance**. On this screen, you can view, filter, locate, acknowledge, mark as read or unread, and toggle the state of the event's participation in vulnerability computation. The option of Event-Pagination is also present.

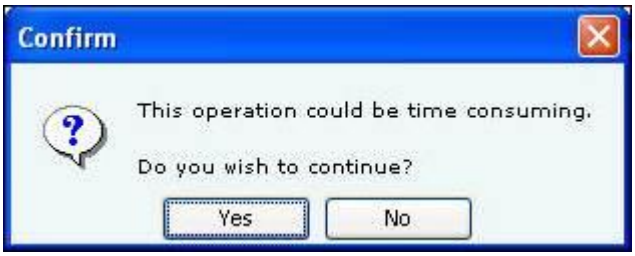
Pagination of Events

You can control the display of events on this screen by choosing to display all the events or display them one page at a time. The Events screen has a toolbar as shown in the figure below, to configure the Pagination.



Toolbar for Configuring the Pagination of Events

- Click the icon, to go to the Previous Page from a Page in the Events screen.
- Click on the respective Page number of the Events List. Maximum ***five*** Page numbers are displayed.
- Click the icon, to go to the Next Page from a Page in the Events screen.
- Click the icon, to disable the Paging option. A Confirmation screen appears.



Confirm turning off Pagination

  - Click **Yes** to turn off the Pagination of Events.
- Click the icon, to Configure Page size of Events as shown in the figure. The Page Size value selected is the number of Events that will be displayed on every page in the Events screen.

(Minimum: 25; Maximum: 100, Default: 25 Events per Page)

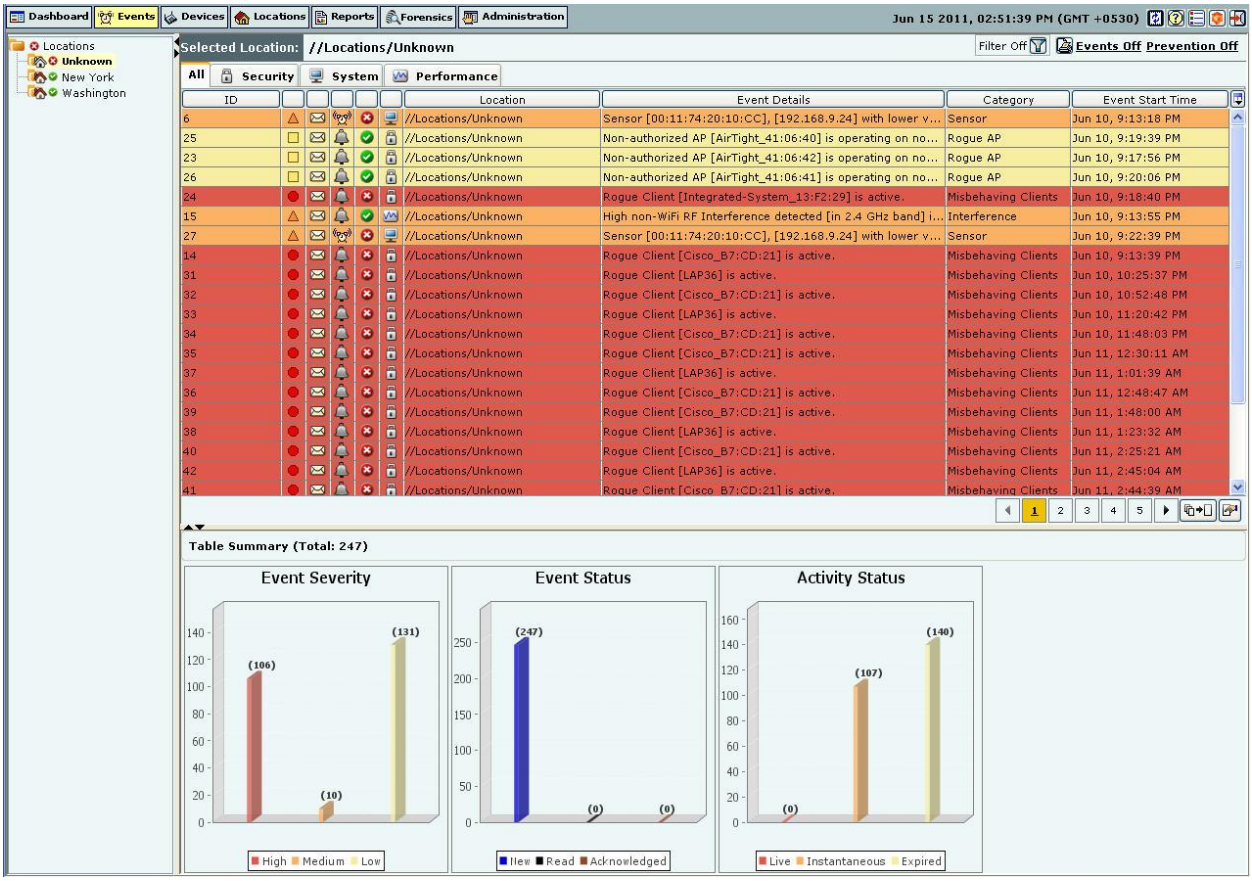
Configure Events Page Size Screen

Note: *The Event Pagination feature will appear whenever the Events screen displays (for example, Tell me more from Dashboard, Events Tab, Events tab in Device Details, and so on.)*

The Graphs on the Events screen are based on all the events that have taken place and not on number of events displayed per page.

Events Screen

To open the Events screen, on the navigation bar, select the **Events** tab



Events Screen

The Events screen includes two panes:

1. On the left, the **Location** tree
2. On the right, the event tabs: **All**, **Security**, **System,** and **Performance**, event list for the selected category of events, and event charts in the Table Summary.

Events: Location Tree

The Location tree shows the complete list of locations created for your WLAN in the system. The Events shown on the right are for the currently selected location. To view a list of events for any other location, select that location in the Location tree, and select an event type in the right pane. A list of events of the selected category that have occurred at the selected location (and its child locations), appear in the list of events in the right pane.

Event Categories, Event Lists, and Table Summary

This pane shows:

- Path of the selected location
- List of events that have occurred at that location

You can view the events at the selected location (and its child locations) based on their category. Tabs are provided for each category:

- **All:** Shows all events
- **Security:** Shows events that indicate security vulnerability or breach in your network
- **System:** Shows events that indicate system health
- **Performance:** Shows events that indicate wireless network performance problems

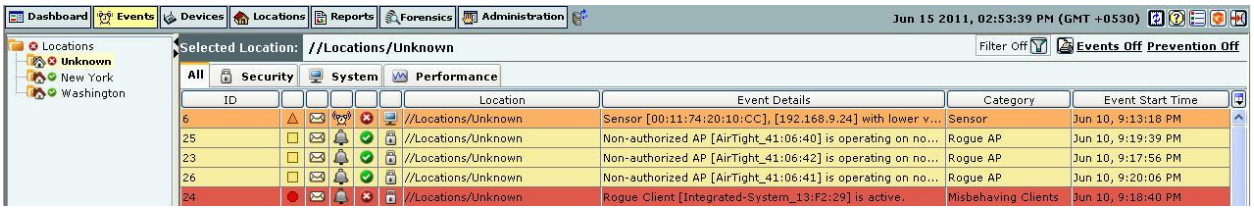
You can view the following information for all the events on the bar charts under 'Table Summary'.

- **Event Severity:** High, Medium, or Low. The event rows are highlighted in red, orange, or yellow color based on the severity level being High, Medium, or Low respectively.
- **Event Status:** New, Read, or Acknowledged
- **Activity Status:** Live, Instantaneous, or Expired

Viewing Events Lists

You must view events in order to take corrective actions. Use the following steps to view an event list:

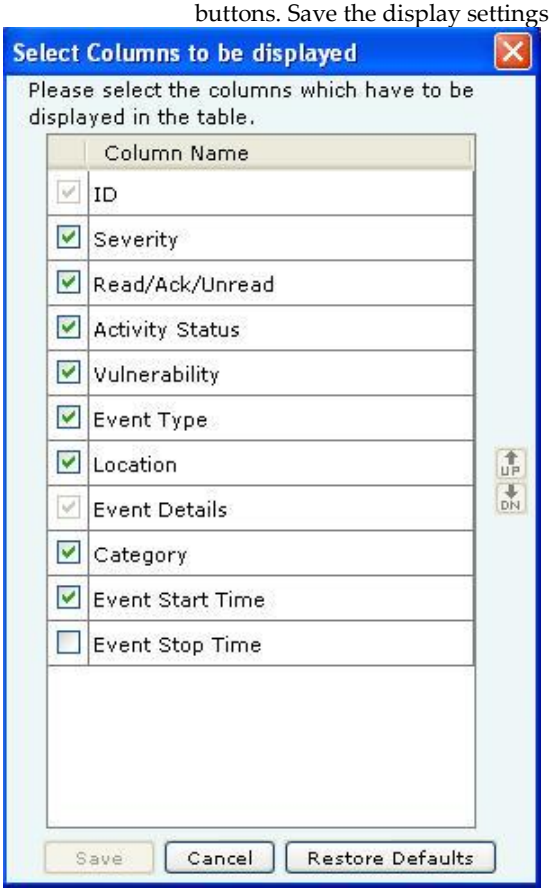
1. In the **Location** tree, select a location.
2. In the right pane, select a tab – **All**, **Security**, **System**, or **Performance**. Event list with following columns displays:



Events Tab – Column Header

- **ID:** Specifies the unique identification number of the event.
- **Severity Icon:** Specifies the severity of an event as **High** denoted by icon, **Medium** denoted by icon, or **Low** denoted by icon respectively.
- **Read Status Icon:** Specifies if an event is new (that is, unread), read, or acknowledged, or a combination of these options.
- **Activity Status Icon:** Specifies if an event is live (in progress), is active and an activity has occurred since it was last read, or past (already occurred). The system follows a **Live Event Architecture** (LEA) where live or instantaneous events are used to classify events based on the duration of their occurrence as follows:
  - **Live**: Have a valid start time stamp and are denoted by the icon. A live event indicates that the triggers that raised the event are operational or continue to exist. On expiration, a valid stop time stamp is assigned to it. One or more conditions can trigger the start and stop of a live event. For example, consider the event 'Rogue AP is Live'. This event will have a start and stop time and therefore, it is easy to figure out that the Rogue AP is still operating. A live event designated by the icon indicates an event that has been updated, that is, some activity has occurred after the event has been read.
  - **Expired:** Live events are marked as 'Expired' once the triggers that caused the events are no longer operational. For example, once a Rogue AP has been located and removed by the administrator and is no longer in operation, the event related to the Rogue AP is marked as 'Expired'. Expired events are marked with the icon.
  - **Instantaneous**: Instantaneous events are the events triggered based on a trigger that does not have continuity. These events are raised each time the trigger is detected by the system. These events are indicated by the icon. For example, 'Change in the SSID of an Authorized AP' or 'Beacon with a large Contention Free Period (CFP) duration detected'. All offline events (events synchronized from a Sensor that has reconnected after operating in the Offline mode) are also treated as instantaneous events.
- **Contribution to Vulnerability:** Indicates if that event occurrence is considered for determining the network's vulnerability status on the Security Dashboard. The icon denotes that the event does not contribute to vulnerability status and is secure. The icon denotes that the event contributes to vulnerability status and is vulnerable.

- **Type Icon:** Indicates the type of the event – **Security**, **System,** or **Performance**. This column is visible only if you select the tab **All** in step 2.
- **Location:** Shows the probable location of the devices participating in the event when the event occurred.
- **Event Details:** Gives a short description of the event.
- **Category:** Specifies the event's sub-category within a selected event type. This column is visible only if you select the tab **All** in step 2.
- **Event Start Time:** Shows the date and time when the event occurred.
- **Event Stop Time:** Shows the date and time when the event stopped.
- **Configure Display Columns:** Clicking on the Column Visibility icon opens a window showing the columns available for display and their current selection and display order. You can check/uncheck the checkbox next to the column name to select/deselect it from Event display**.** You can change the display order of a column by selecting the column name and moving it up/down with Up/Down buttons. Save the display settings by clicking **Save** button.



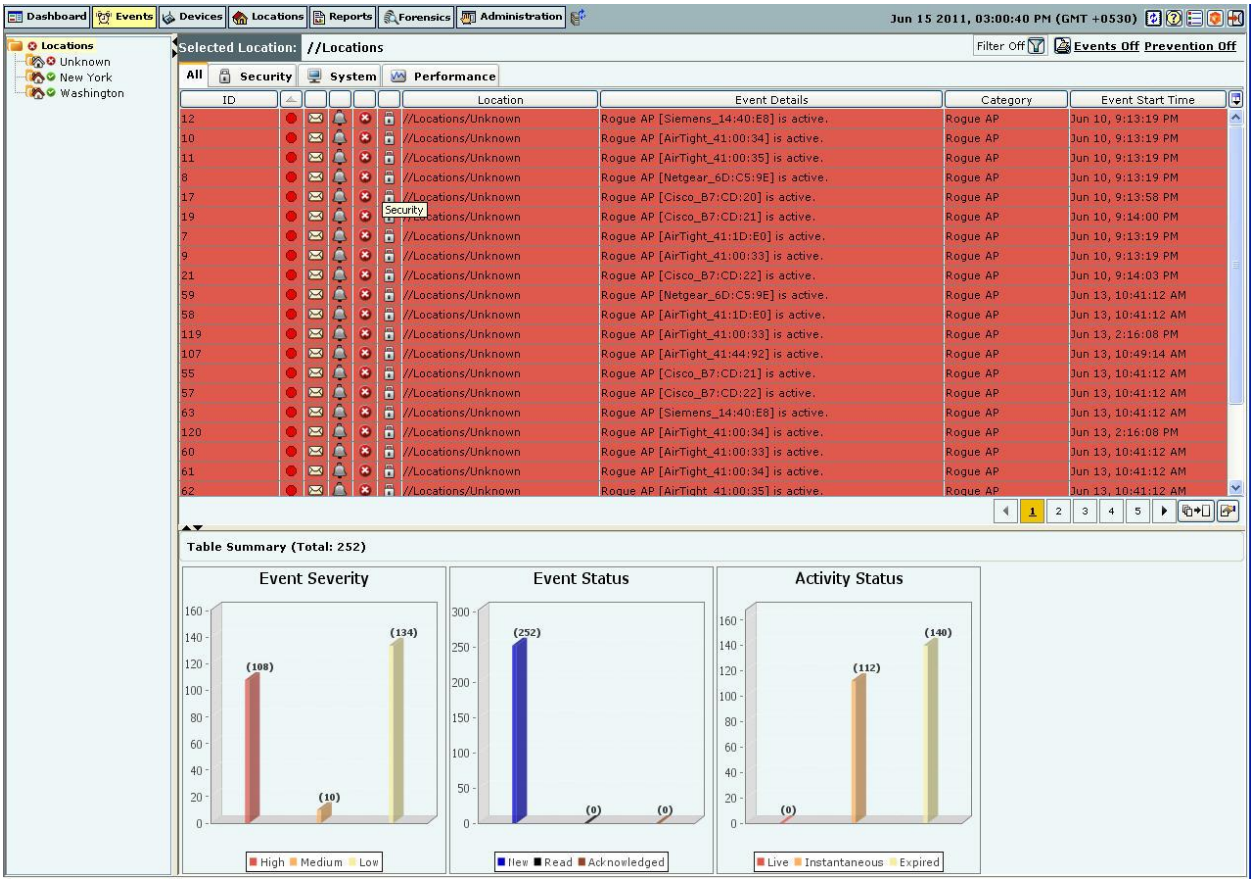
Events Tab - Display Columns Screen

Sorting Events

The system enables you to sort events by columns, which helps you arrange information according to your requirements. Use the following steps to sort events:

1. In the **Location** tree, select a location.
2. Select an event type tab, for example, **Security**.
3. Optionally, to drill down further, select an event category tab, for example, **Rogue AP**.
4. To sort a column, click the column header, for example, **Date**.

Note*: When you sort the list for the first time, the system sorts it in the ascending order. Click a column header again to re-sort in descending order.*

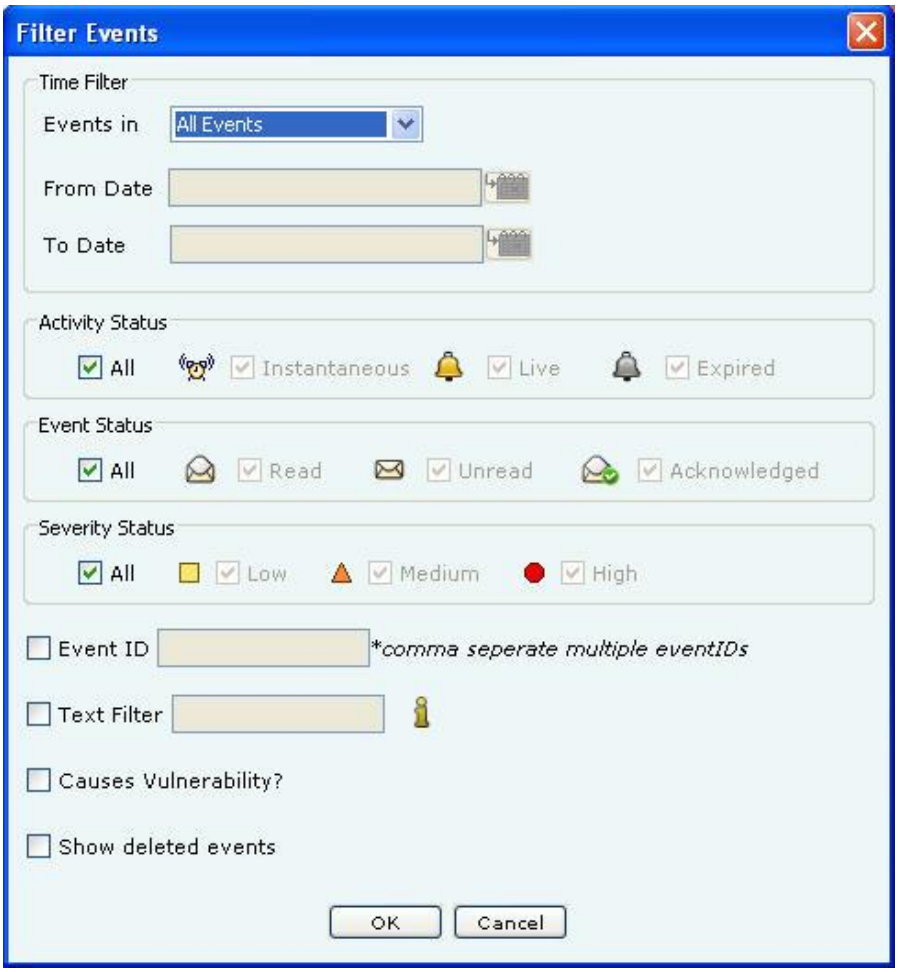


Sorted Events List

Filtering Events

To focus your attention to a subset of events based on a filtering criteria (such as events in a particular time period, or of particular category, and so on) system provides you with the capability to filter events. Use the following steps to filter events:

1. On the **Events** screen, click the icon to open the **Filter Events** dialog.



Filtering Events

2. In the **Time Filter** dialog, do one of the following:
   - Under **Events in** select the following **Events in last 5 Minutes, Events in last 1 Hour, Events in last 1 Day,** or**Customize** to choose a **From** and **To Date** as described below. *Default*: All Events.
   - Select **Customize** under the drop-down menu in **Events in** and then choose either of the following:
     - Under **From Date**, click the icon to specify a start date and time and then click **OK**.
     - Under **To Date**, click the icon to specify an end date and time and then click **OK**.
3. Under **Activity Status**, select one or more of the following checkboxes:
   - All
   - Instantaneous
   - Live
   - Expired
4. Under **Event Status**, select one or more of the following checkboxes:
   - All
   - Read
   - Unread
   - Acknowledged
5. Under **Severity Status**, select one or more of the following checkboxes:
   - All
   - Low
   - Medium
   - High

6. Select the checkbox, **Event ID**, to enter event IDs manually for searching data related to it.
7. Select the checkbox, **Text Filter**, to enter search text to select events containing the text in event details.
8. Select the checkbox, **Causes Vulnerability?**, to select those Events which have been selected to contribute to Vulnerability.
9. Select the checkbox, **Show deleted events**, to view deleted events. Event text appears as ***strikethrough*** when you select this checkbox.
10. To save and apply the event filtering criteria, click <**OK**>. When the filter is applied it is denoted by **Filter On** on the Console, if no filter is applied it is denoted by **Filter Off** on the Console.

Working with Events

Events occur when Sensors detect any unexpected change in the WLAN. The system classifies events into the following categories:

- Security events (for example, Rogue APs and Denial of Service (DoS) attacks)
- System events (for example, Sensor connection/disconnection, Server status, or Troubleshooting)
- Performance events(for example Bandwidth, Configuration, Coverage, or Interference)

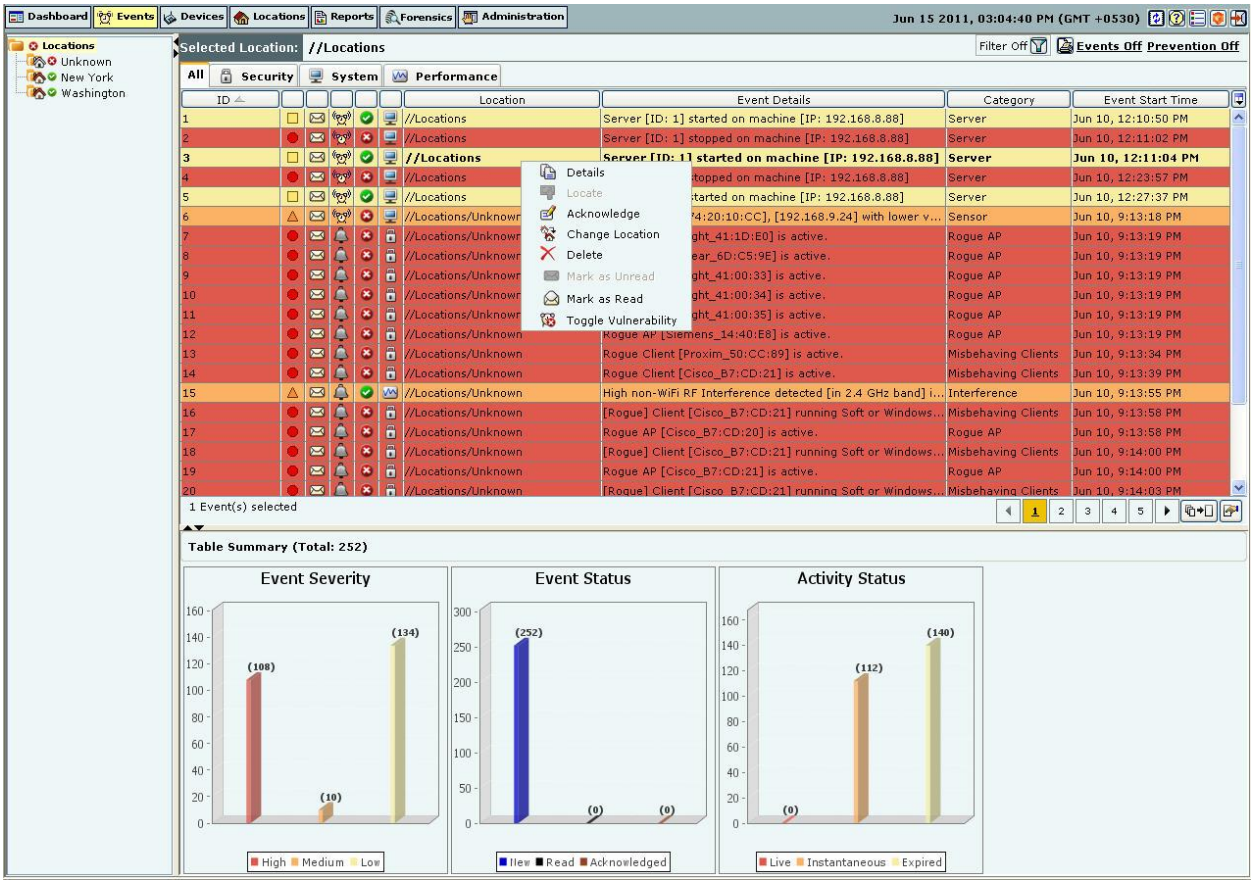
Events Context-Sensitive Menu

Context-sensitive menus for **Events** enable you to:

- View event details
- Locate an event
- Acknowledge an event
- Forensics
- Change the location of an event
- Delete or undelete an event
- Mark an event as
  - Unread
  - Read
- Toggle Vulnerability

Method for Opening Events Context-Sensitive Menu

To open the Events context-sensitive menu, click the Events tab and then right-click an event row to open the context-sensitive menu.



Events Context-Sensitive Menu

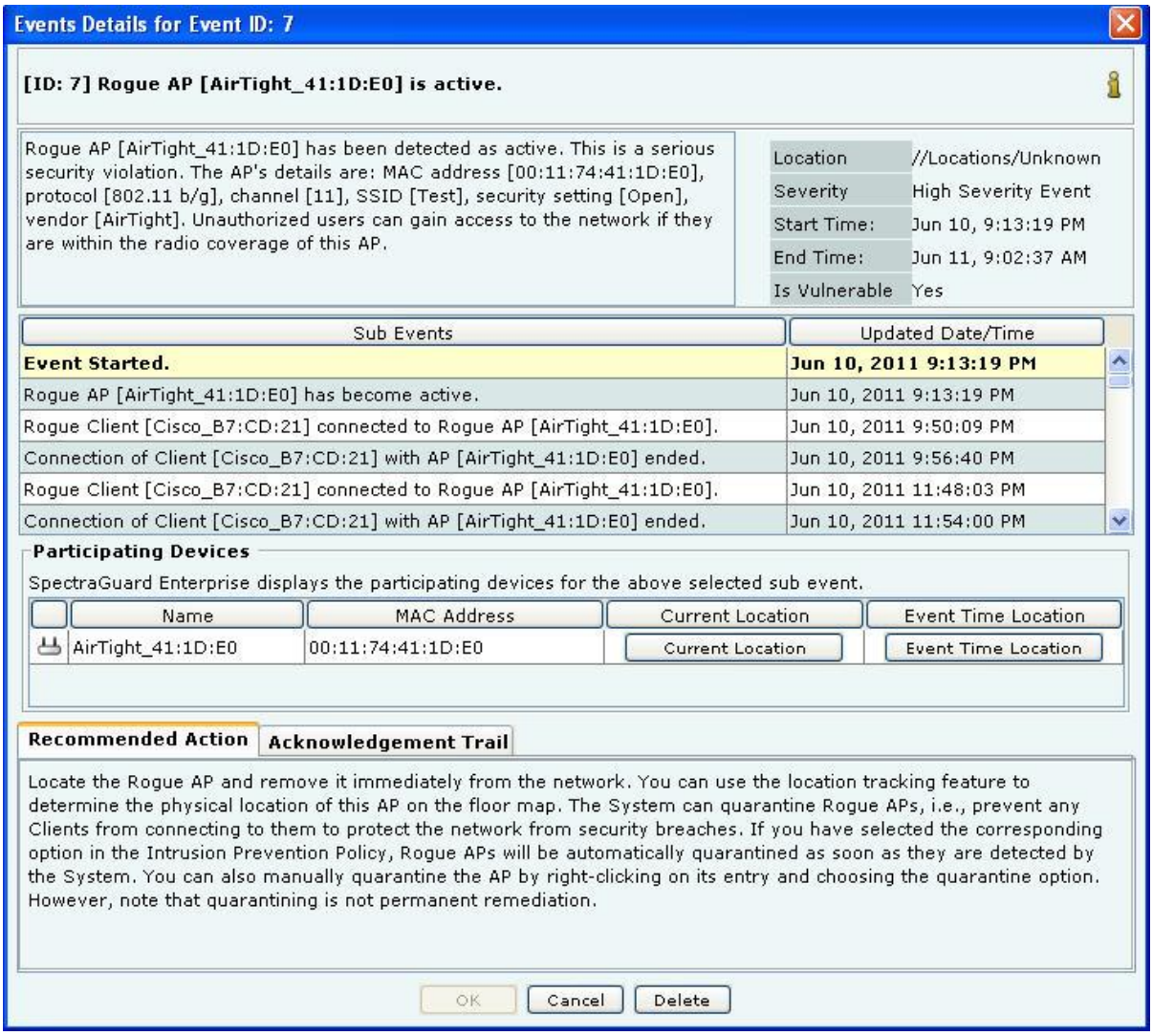
Items in the Events Context-Sensitive Menu

The Events context-sensitive menu includes the following items.

- **Details:** Opens the **Events Details** dialog explained in the Event Details Dialog section. This option is unavailable if you select multiple events.
- **Locate:** Opens the **Locate Event** dialog explained in the Tracking the Location of an Event section and enables you to track the location of an event by tracking the location of devices involved in that event.
- **Acknowledge:** Enables you to add comments to an event. These comments serve as a record of actions taken / to be taken in response to an event.
- **Forensics:** Opens the **Forensics Details** dialog explained in the Viewing Threats List section. This menu option is available for Security events (such as Rogue AP, Mis-configured AP, Honeypot AP, DoS, Banned AP, Unauthorized Association, Mis-association, Bridging Client, Banned Client, and Ad hoc Networks).
- **Change Location:** Opens the **Location Tag** dialog that enables you to:
  - View the complete list of locations
  - Change the location of the selected event
- **Delete:** Enables you to delete an event. AirTight recommends that you delete an event only after you have taken the recommended action for that event.
- **Undelete:** Available only if one or more events are deleted and you have checked **Show deleted events** check box discussed in the Filtering Events, this option enables you to un-delete event(s).
- **Mark as Unread:** Available only if an event is read; this option enables you to mark an event as a new event.
- **Mark as Read:** Enables you to mark a new event as read.
- **Toggle Vulnerability:** Enables you select/deselect a checkbox to specify whether this specific event instance should be considered / not considered for computing the vulnerability status of the network.

Event Details Dialog

To open the **Events Details** dialog, on the **Events** screen, double-click an event row.



Events Details Dialog

The **Events Details** dialog gives information about the selected event, which helps you determine the appropriate response. The various fields and buttons in this dialog are:

Short Description: Provides a brief description of the event. This is presented as bold text at the top of the dialog.

Event Detailed Description: Gives a detailed description of the event.

Location: Displays the name of the location where the event occurred.

Severity: Displays the severity level of the event.

Start-Time: Shows the date and time when the event started.

End-Time: Shows the date and time (only for expired events) when the event ended.

Is Vulnerable: Indicates if the event contributes to the vulnerability status of the network.

Under **Sub Events** column, you can view a list of activities or sub-events associated with the event. The sub events display historic data that varies over time. For example, consider a past event "Rogue AP is Active"; this event contains an AP's classification (category) as time varying data. To capture this change in classification, the event will have sub-events such as:

- Event started
- Classification of AP changed to Rogue

- AP has become inactive
- Event expired

Under **Updated Date/Time** column, you can view the date and time of generation of the sub-event.

Participating Devices: Displays the following information for each device involved in the sub-event:

- Icon
- Name
- MAC address
- Current Location Button (to see the current location of the device involved in the sub-event)
- Event Time Location Button (to see the location of the device at the time of occurrence of the sub-event)

Under **Recommended Action** tab, the system displays the recommended action that you can take in response to the event

Under **Acknowledgement Trail** tab:

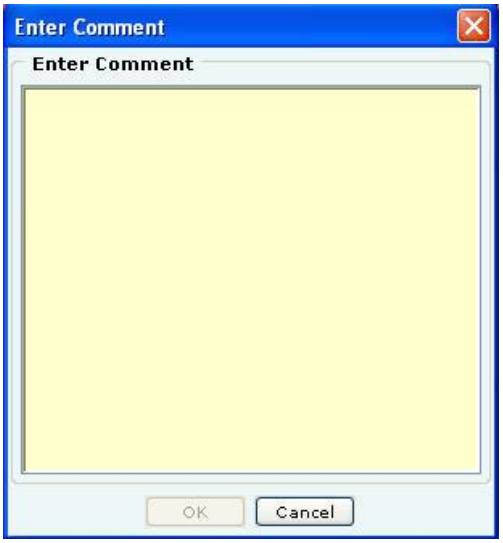
- **Add Comments:** Enables you to type acknowledgement notes for the event and acknowledge the event.
- **Acknowledgement Notes Trail**: Provides a history of acknowledgement notes.

Click **Delete** to delete the event after confirmation.

Acknowledging an Event

Acknowledge an event so that you can refer to these notes in future. Use the following steps to acknowledge an event:

1. On the **Events** screen, right-click an event row.
2. From the resulting menu, select **Acknowledge**.



Event Acknowledgement Dialog

3. In the **Enter Comment** dialog, under **Enter Comment**, enter informative text.
4. To save the text click <**OK**>.

***Note**: An administrator can read, select, and add comments (acknowledgment notes) for multiple events.*

Deleting an Event

When you delete an event manually, the system does not remove it from the system but only marks it as deleted. A deleted event does not contribute to the vulnerability status for a location. Deleted events are also visible in a report. Permanent deletion of events from the database happens only automatically based on the configured auto-deletion policy for events (see Auto Deletion).

Use the following steps to delete an event:

1. On the **Events** screen, right-click an event row.

2. From the resulting menu, select **Delete**.
3. In the **Confirm** dialog, click **<Yes>** to delete the event. If you have selected the **Show deleted events** checkbox on the **Filter Events** dialog, the text for this deleted event row appears as ***strikethrough***.

Recommended: *AirTight recommends that you delete an event only after you view it and have taken the necessary action.*

Undeleting an Event

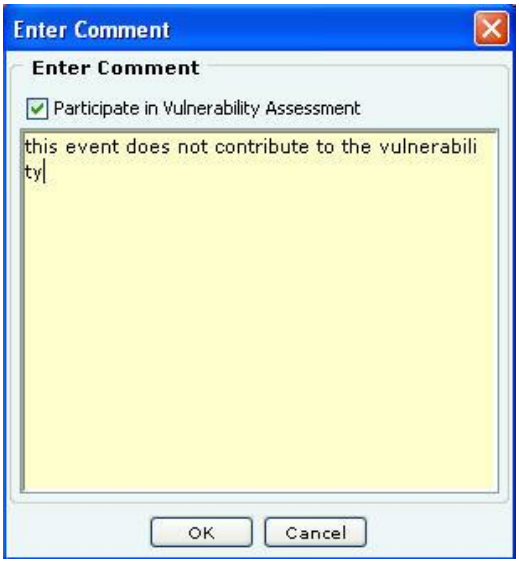
Use the following steps to undelete an event:

1. On the **Events** screen, right-click an event row that is deleted. The text for this deleted event row appears as ***strikethrough.***
2. From the resulting menu, select **Undelete**.

Toggling an Event's Contribution to Network Vulnerability

As part of system configuration you would have identified certain event types as contributing to vulnerability by checking the Vulnerable flag in the event configuration. For details refer to Event Settings, Configuration section in **Admin** tab. Whenever events of these types occur, they contribute to the vulnerable status of the network. After taking action on these event occurrences, you can change the vulnerability status of such event occurrences from the **Event Screen**. Use the following steps to toggle the vulnerability of an event:

1. On the **Events** screen, right-click an event row.
2. From the resulting menu, select **Toggle Vulnerability**.



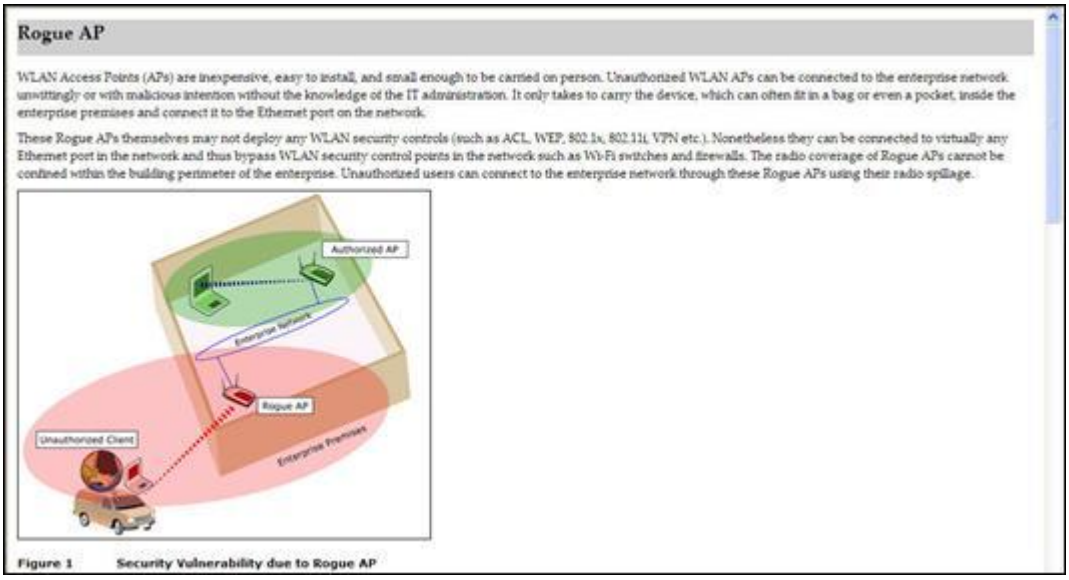
Toggling Event Vulnerability

3. In the **Enter Comment**, select/deselect the checkbox **Participate in Vulnerability Assessment**.
4. In the space provided below the checkbox, enter informative text describing the reason for changing.
5. To save the changes, click **OK**.

Viewing Detailed Information for an Event

You can view more information about an event to understand its cause and effect. Use the following steps to view additional information for an event:

1. On the **Events** screen, double-click an event row.
2. On the **Event Details** dialog that appears, click the icon. A dialog that shows more information for that event type appears.

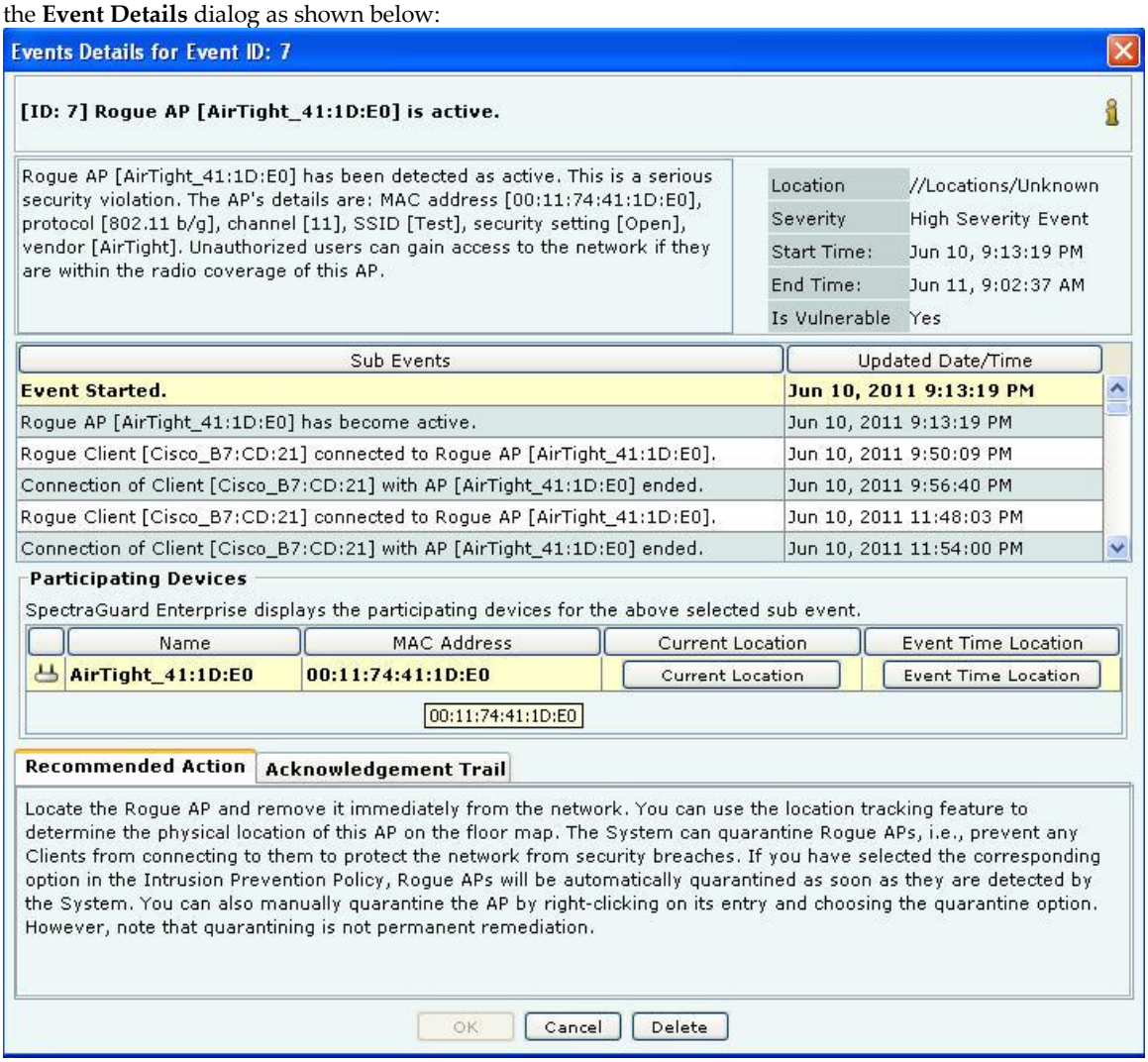


Viewing Additional Information about an Event

Tracking the Location of an Event

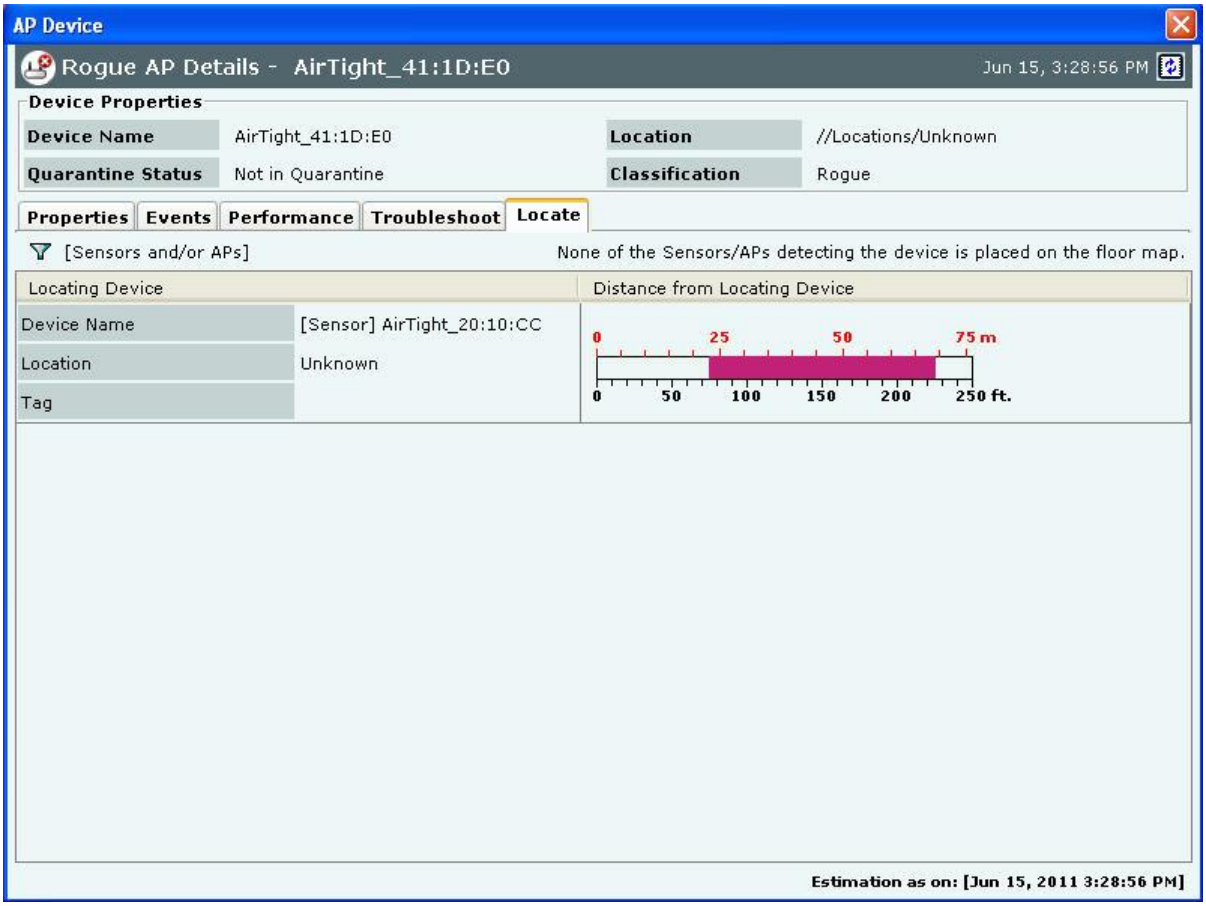
You can track the location of an event by tracking the location of each participating AP, Client, or attacker device. Use the following steps to track the location of an event:

1. On the **Events** screen, right-click an event row and then from the resulting menu, select **Locate**. This opens the **Event Details** dialog as shown below:



Tracking the Location of an Event

2. On the **Event Details** dialog, perform the following:
   - Under **Sub Events**, select a sub-event
   - Under **Participating Devices**, select a device participating in the selected sub-event
   - Click <**Current Location**> to view the current location of the device. The Device Details dialog opens with **Locate** tab selected providing the details of the location (see Device Details).
   - Click <**Event Time Location**> to view the location of the device at the time of occurrence of the sub-event as shown in the figure.

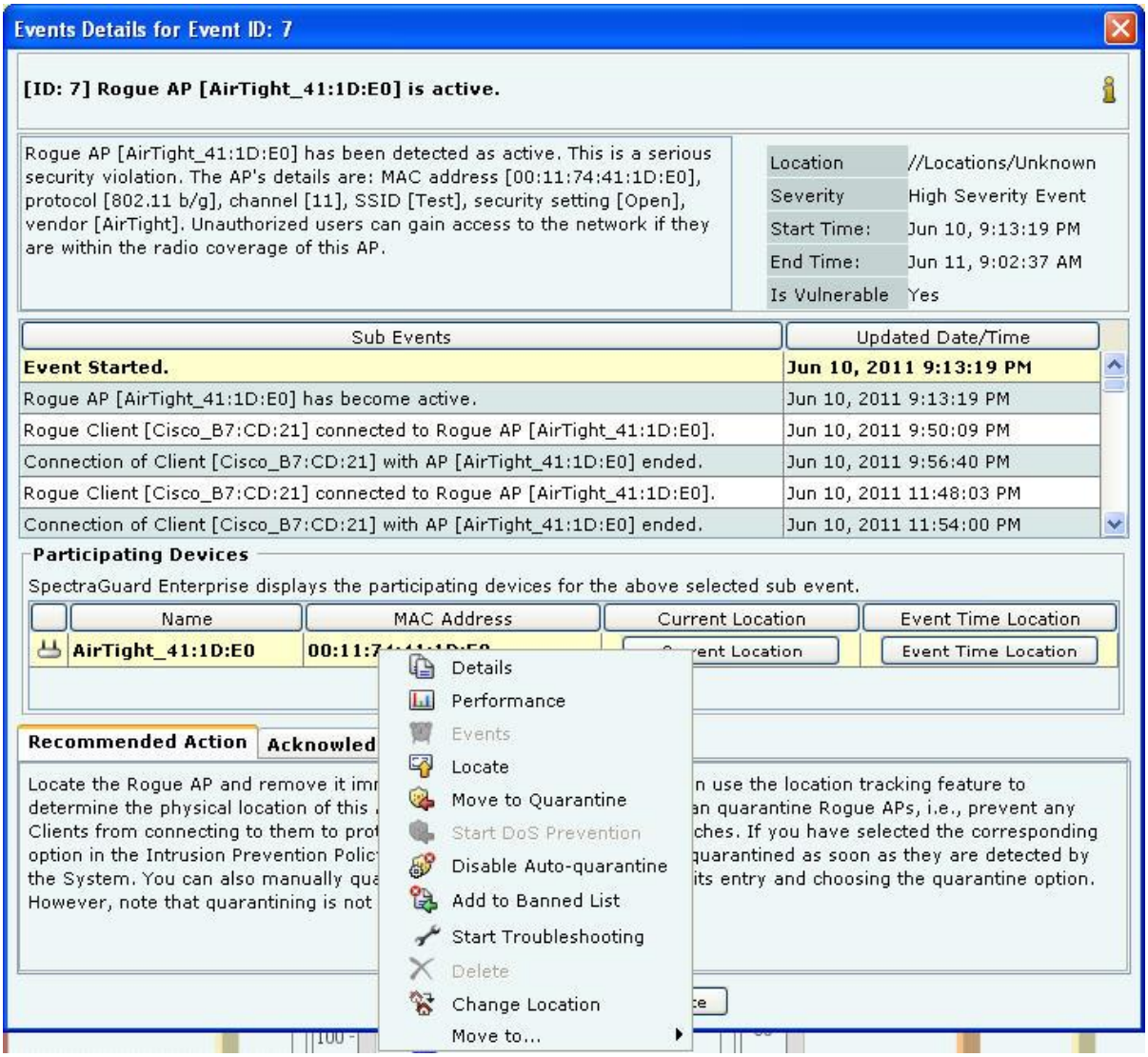


Event Time Location dialog

Viewing Properties of Devices associated with an Event

To view/edit the properties of an AP, Client, or Sensor associated with an event use the following steps to access the corresponding device menu:

1. On the **Events** screen, double-click an event row.
2. On the **Event Details** dialog, under **Participating Devices**, right-click a device row and select **Details** from the resulting menu. The right-click options are same as that of Device Details dialog. For more details refer to the Devices Tab section.



Viewing Device Properties from Events Details Dialog

Events Tab: User Saved Settings

The following User choices made during browsing of Events Tab are saved by the system.

- Display Columns and their order
- Events Filter
- Page Size

These settings are saved on log out as well as movement to other tabs on the Console.

Devices Tab

Devices: Panel Displaying WLAN Devices

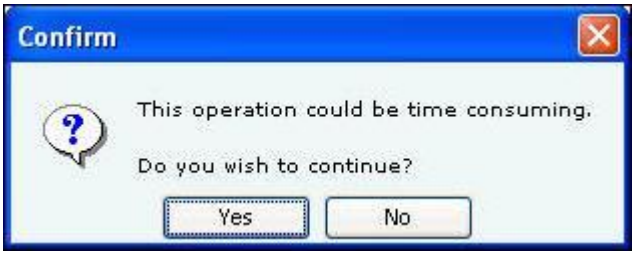
The **Devices** screen provides information about APs, clients, sensors, sensor/AP combos, and networks visible to the system. On this screen, you can view/edit their details, sort the display based on their properties, carry out a variety of operations, like changing their location, changing their classification, initiating quarantine activities, and troubleshooting an AP, a Client, a Sensor or a Sensor/AP Combo.

Pagination of Devices

You can control the display of devices on this screen by choosing to display all the devices or display them one page at a time. The Devices screen has a new toolbar as shown in the figure below, to configure the Pagination.

Toolbar for Configuring the Pagination of Devices

Click the icon, to go to the Previous Page from a Page in the Devices screen.
Click on the respective Page number of the Devices List. Maximum ***five*** Page numbers are displayed.
Click the icon, to go to the Next Page from a Page in the Devices screen.
Click the icon, to disable the Paging option. A Confirmation screen appears.



Confirm turning off Pagination

Click **Yes** to turn off the Pagination of Devices. Click the icon, to Configure Page size of Devices as shown in the figure. The Page Size value selected is the number of Devices that will be displayed on every page in the Devices screen.

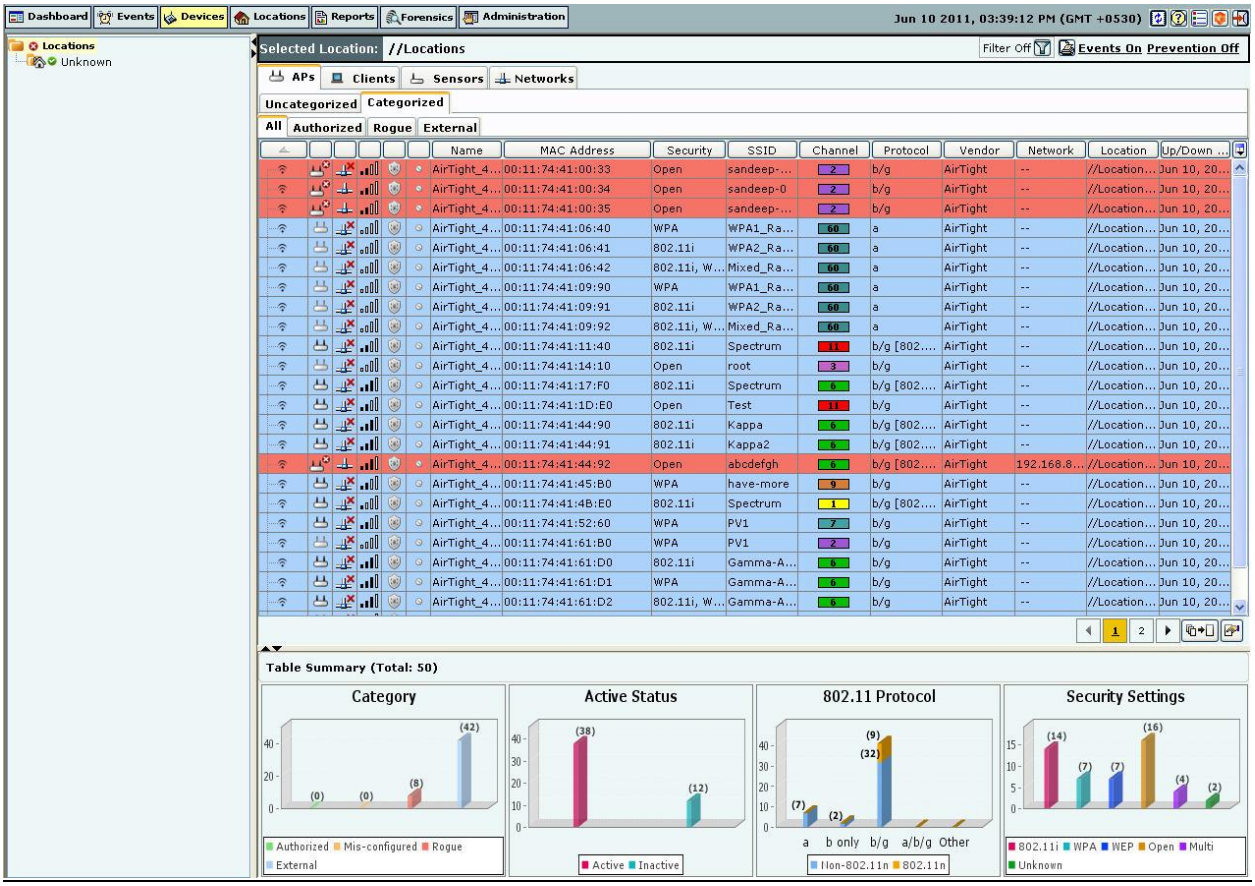
(Minimum: 25; Maximum: 100, Default: 25 Events per Page)

Configure Devices Page Size Screen

Note: *The Device Pagination feature will appear whenever the Devices screen is displayed (for example, Manage SAFE Clients screen in Administration tab, and so on.)*

Devices Screen

To open the Devices screen, on the navigation bar, select the **Devices** tab



Devices Screen

The Devices screen includes two panes:

On the left, the **Location** tree.

On the right, device category tabs, device lists, and table summary.

Devices: Location Tree

The Location tree shows the complete list of locations for your WLAN in the system. The devices at the selected location are shown in the pane on right. You can choose a Device type (APs, clients, sensors or networks) and category within the device type tab to see a list of devices of chosen category.

Device Categories, Device Lists, and Table Summary

The right pane of the **Devices** screen shows a list of devices tagged to the selected location. Tabbed views enable you to view device lists for **Uncategorized** and **Categorized APs** and **Clients**, a list of all the **Sensors and a list of networks detected by SGE sensors**.

The **Table Summary** displays information about APs, Clients, Sensors, and networks in the network.

APs			
Chart Name	**Uncategorized APs**	**Categorized APs**	**Display Information**
Potential Classification	Yes		Potentially Authorized
			Potentially Rogue
			Potentially External
			Indeterminate
Category		Yes	Authorized

			Mis-configured
			Rogue
			External
Network Connectivity	Yes		Networked
			Non-Networked
			Indeterminate
Active Status		Yes	Active
			Inactive
802.11 Protocol (with or without 802.11n capability)	Yes	Yes	a
			b only
			b/g
			a/b/g
			Other
Security Settings	Yes	Yes	802.11i
			Wi-Fi Protected Access (WPA)
			Wired Equivalent Privacy (WEP)
			Open
			Multi
			Unknown

***Note**: The system labels APs that are imported and whose protocol information is not available as **Other**.*

Clients			
Chart Name	**Uncategorized Clients**	**Categorized Clients**	**Display Information**
Active Status	Yes	Yes	Active
			Inactive
Category		Yes	Authorized
			Misbehaving
			External
			Guest
			Rogue
Quarantine Status	Yes		Quarantined
			Not Quarantined
SAFE Status	Yes	Yes	Active
			Inactive
			Not Installed

Sensors	
Chart Name	**Display Information**
Sensor Type	Sensor
	Sensor/AP Combo
	ND
Active Status	Active
	Inactive

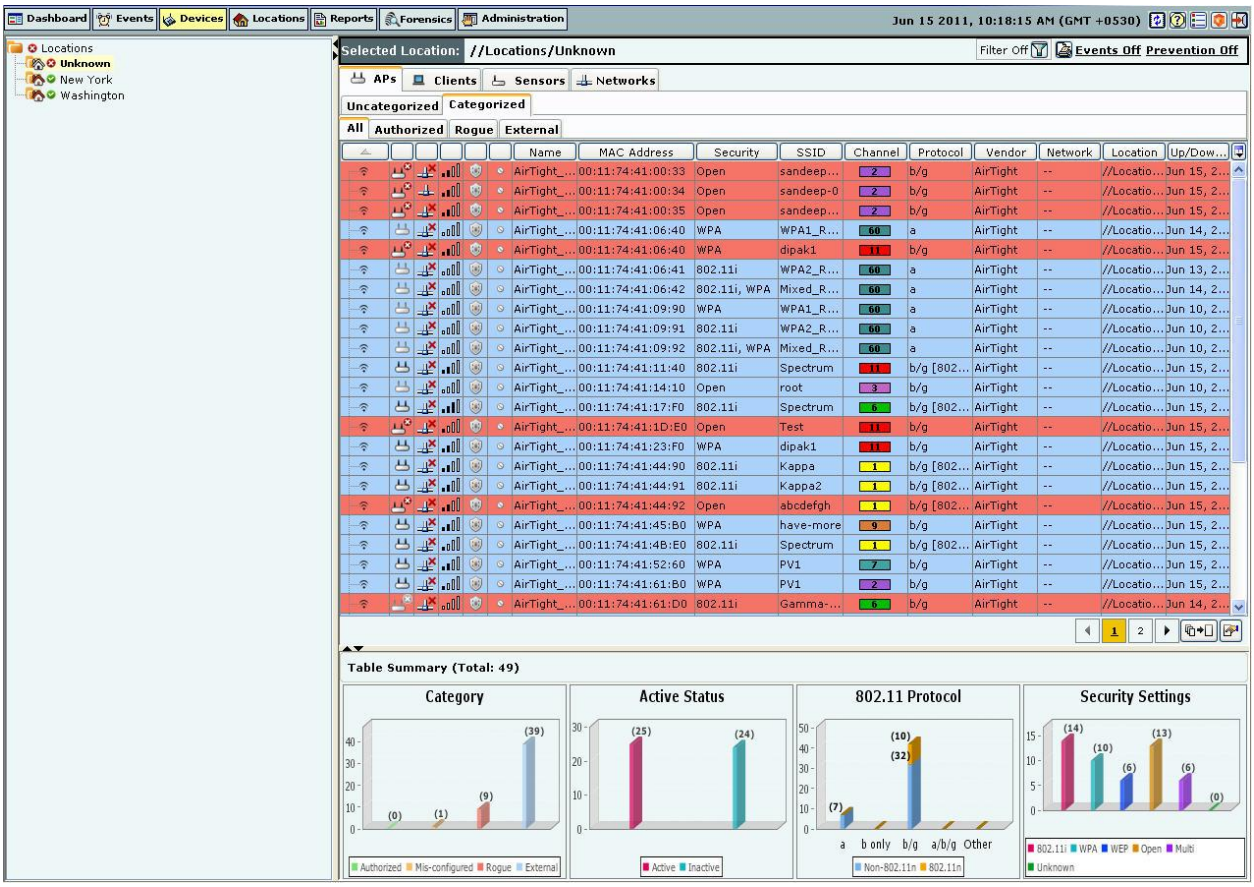
Networks	
Chart Name	**Display Information**
Monitored Status	Monitored(Yes)
	Not Monitored(No)

Viewing APs/Clients List

Use the following steps to open a APs/Clients list:

1. In the **Location** tree, select a location.

2. On the right, a list of APs/Clients tagged to that location appears; select either the **APs** or **Clients** tab.
3. On the header, next to the Search icon, select the **Include Inactive APs/Clients** check box to view the inactive APs/Clients in the list.
4. Select either the **Uncategorized** or **Categorized** tab under **APs** or **Clients** to organize devices. For **Categorized APs**, select one of these tabs: **All**, **Authorized**, **Rogue**, or **External**. For **CategorizedClients All, Authorized, Rogue, Guest,** or **External**



Categorized APs List

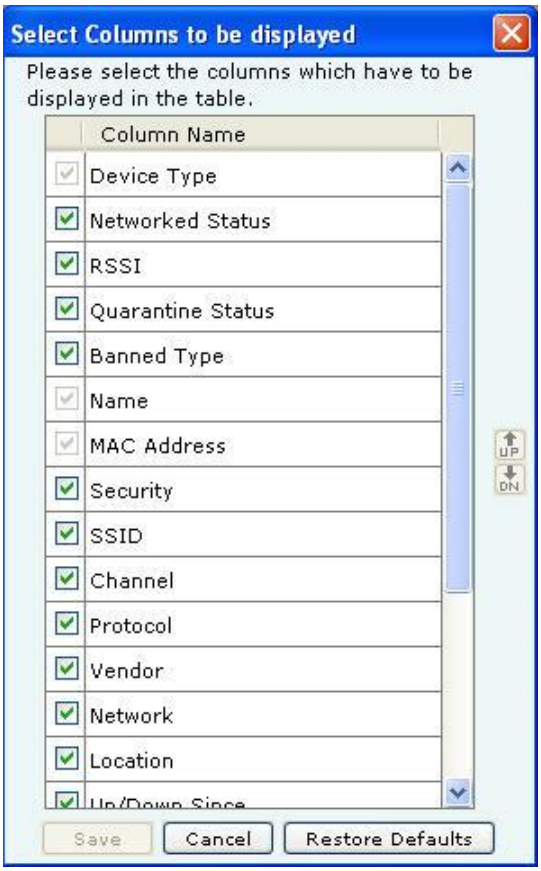
The Devices screen shows the following information about APs or Clients.

- **Expand/Collapse Column:** Appears only for Merged or APs with multiple BSSIDs. The Expanded view shows list of individual BSSIDs with primary AP at the top.

***Note**: The **Expand/Collapse Column** appears only in the **APs→Categorized→All** and **Authorized** screens.*

- **Device Type and Status Icon:** Identifies the type of AP – *Rogue*, *External*, *Authorized*, *Indeterminate*, *Multiple Radio* or the type of Client – *Authorized* or Rogue/Guest/External (Non-authorized). Additionally, this icon specifies the status of APs/Clients as – *Active/Inactive*.
- **Networked Status Icon:** Identifies if the AP is connected to the wired network. This column is not present for Clients.
- **Quarantine Status Icon:** Identifies the quarantine status of the AP or Client – *Quarantined*, *Quarantine Pending*, or *Not in Quarantine*. Quarantining an AP or Client utilizes the Sensor's computation resources. If no Sensor is currently available to quarantine the AP or Client, this icon shows *Quarantine Pending*.
- **RSSI:** Displays the observed RSSI (Received Signal Strength Indicator) value for the AP or Client.
- **Banned Device Icon:** Identifies if the AP or Client is in the Banned AP List or Banned Client List.

- **Troubleshooting Status Icon:** Identifies whether troubleshooting is in progress on the specified AP or Client, or both.
- **SpectraGuard Security Agent For Endpoints (SAFE) Status Icon:** Identifies the SAFE installation status – *Installed-Active, Installed-Inactive,* or *Not Installed*.
- **SAFE Risk Level Icon:** Identifies the SAFE risk level – *High, Medium,* or *Low*.
- **Smart Device Icon:** Identifies the smart device, that is whether the device is an approved smart device or unapproved smart device.
- **Name:** Specifies the user-defined name for the AP or Client. If SAFE is installed then the hostname of the Client is displayed.
- **MAC Address:** Specifies the unique 48-bit IEEE format address of the AP or Client assigned to the network adapter by the manufacturer.
- **Security:** Shows the security settings for the AP, such as Open, WEP, WPA, 802.11i, or Unknown.
- **Encryption:** Specifies the encryption used for unicast communication between the AP and a Client.
- **MFP/11w:** Indicates if the AP implements pre-802.11w standard from Cisco or 802.11w standard, to mitigate against the DoS attacks against AP.
- **Authentication:** Specifies the procedure used by APs to verify the identity of a Client.
- **SSID:** For an AP, it specifies the operating SSID, which is the unique identity that prospective Clients use to recognize the network. When several WLANs operate in the same space, SSID helps Clients in deciding which one to join. However, SSID alone does not provide any meaningful security. For a Client, it specifies the operating SSID of the AP with which the Client is associated.
- **Channel:** Specifies the channel number on which the AP or Client operates. The channel is shown as **Dual** for an AP or Client that operates on both 802.11a and 802.11b/g simultaneously.
- **Protocol:** For an AP, it specifies the 802.11 protocol used – 802.11a, 802.11b only, 802.11b/g, or 802.11a/b/g, with or without 802.11n capability. For a Client, it specifies the 802.11 protocol (with or without 802.11 n capability) used by the AP with which the Client is associated.
- **Vendor:** Specifies the name of the AP or Client manufacturer. The vendor name is inferred from the first three bytes of the MAC address.
- **Network:** Shows the Network Tag of the network to which the AP is connected. This value is blank if the AP is not connected to a network.
- **Location:** Gives the user-defined location name of the AP or Client.
- **Up/Down Since:** Specifies the date and time since the AP or Client is up or down.
- # **Associated Clients:** Specifies the number of Clients associated to the AP.
- **Group:** Displays the SAFE group to which the Client belongs. It denotes the group assigned to the SAFE Client.
- **Associated AP:** Specifies the name of the AP with which a Client is associated. This is the AP through which the Client communicates with other Clients and other networked devices.
- **Cell ID:** Specifies an ID for Clients in ad hoc mode. The Cell ID is common for all the Clients that form a single ad hoc connection.
- **Smart Device Type Name:** Specifies the type of smart device
- **First Detected At:** Specifies the date and time when the AP/Client was first detected by the system.
- **Configure Display Columns:** Clicking on the Column Visibility icon opens a window showing the columns available for display and their current selection and display order. You can check/uncheck the checkbox next to the column name to select/deselect it from Device display. You can change the display order of a column by selecting the column name and moving it up or down with Up/Down buttons. Save the display settings by clicking the **Save** button.



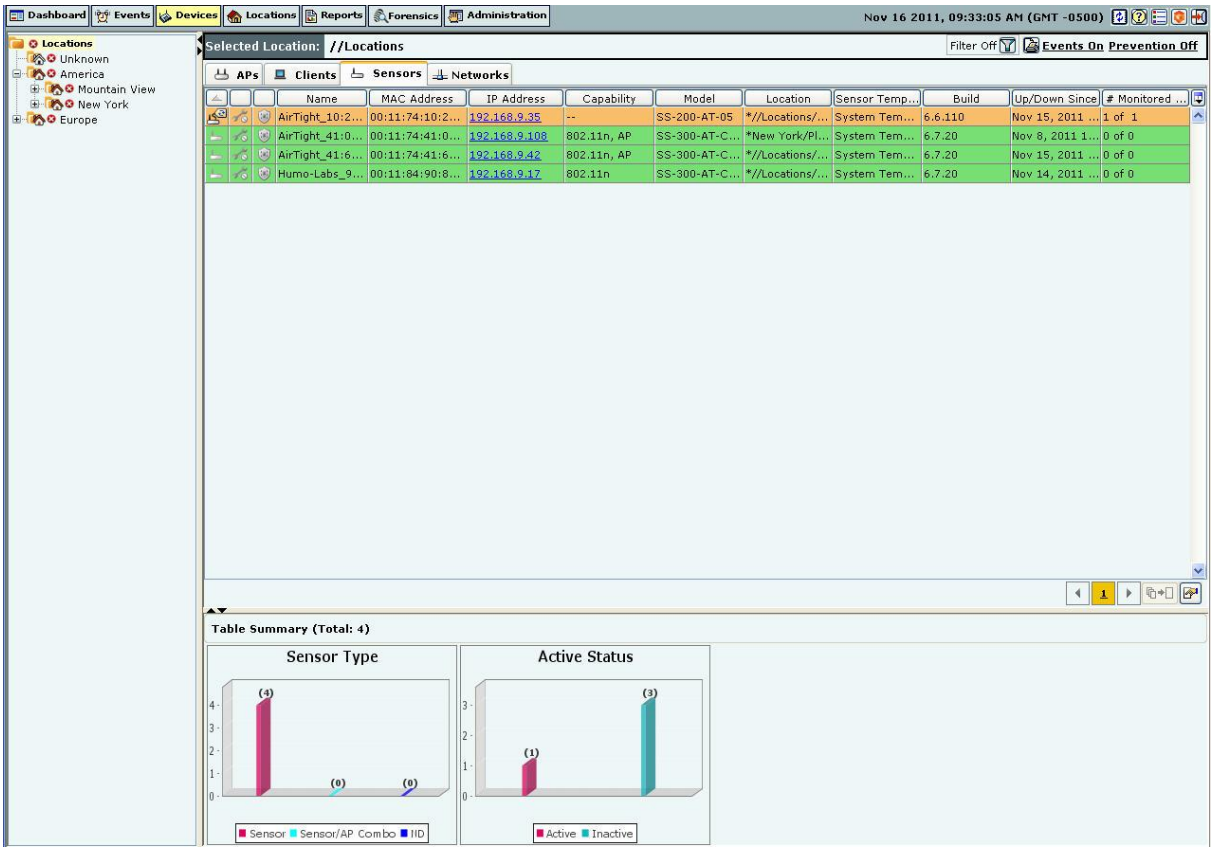
Devices Tab – Display Columns Screen

***Note**: The columns **Network Status Icon**, **Security, Encryption, 11w/MFP, Authentication, Channel**, **Network**, and **Associated Clients** appear only in the APs list. **SAFE Status Icon**, **SAFE Risk Level Icon**, **Group**, **Associated AP**, and **Cell ID** appear only in the Clients list.*

Viewing Sensors List

Use the following steps to open a Sensors list.

1. In the **Location** tree, select a location.
2. On the right, a list of devices tagged to that location appears; select the **Sensors** tab.



Sensors List

The Devices screen shows the following information about Sensors:

- **Device Type and Status Icon:** Identifies the type of Sensor – Sensor, Sensor/AP combo, ND, and its status – Active, Inactive, Upgrade Required, or Upgrade in Progress.
- **Troubleshooting Status Icon:** Identifies if troubleshooting is in progress on the specified Sensor.
- **Name:** Specifies the user-defined name for the Sensor.
- **MAC Address:** Specifies the unique 48-bit IEEE format address of the Sensor assigned to the network adapter by the manufacturer.
- **IP Address:** Specifies the IP Address of the Sensor.
- **Capability:** Specifies if the Sensor has 802.11n capability. Also specifies if the sensor is Sensor/AP combo. The text **AP** indicates that the sensor/AP combo device has AP mode enabled.
- **Model:** Specifies the model number of the Sensor
- **Location:** Gives the user-defined location name of the Sensor.
- **Template:** Specifies the Configuration template assigned to the Sensor.
- **Build:** Specifies the build number of the software running on the Sensor.
- **Up/Down Since:** Specifies the date and time since the Sensor is up/down.
- **# Monitored VLANs:** Specifies the number of VLANs monitored by the ND.
- **AP Mode:**Specifies whether the AP mode is enabled or disabled.
- **AP Template:**Specifies the AP template being used by the Sensor/AP combo.

***Note**: The default mode for Sensor/AP Combo device is the Sensor mode.*

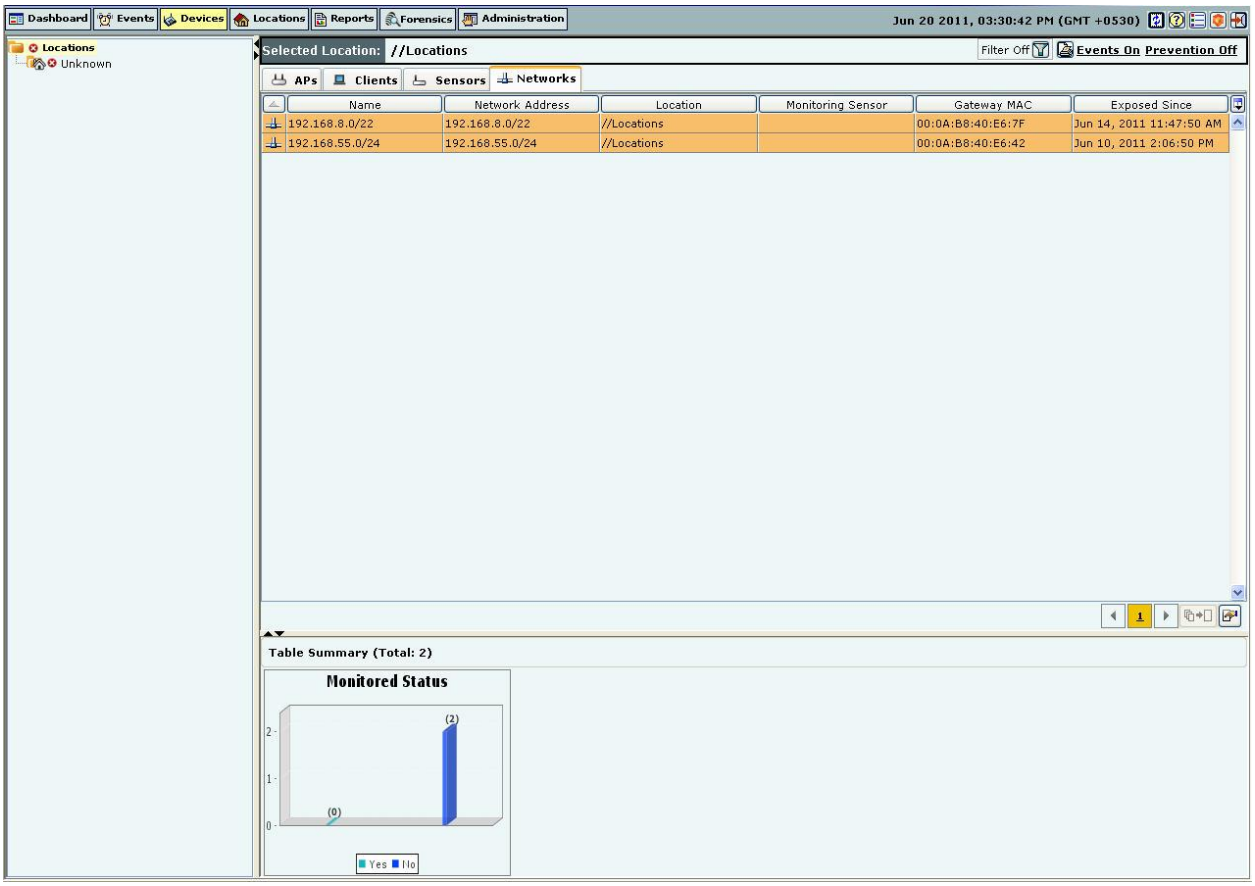
Viewing List of Networks Detected by Sensors

Use the following steps to view the list of networks detected by sensors

1. In the **Location** tree, select a location.

2. On the right, a list of devices, and networks tagged to that location appears; select the **Networks** tab.

The following figure displays the Networks tab.

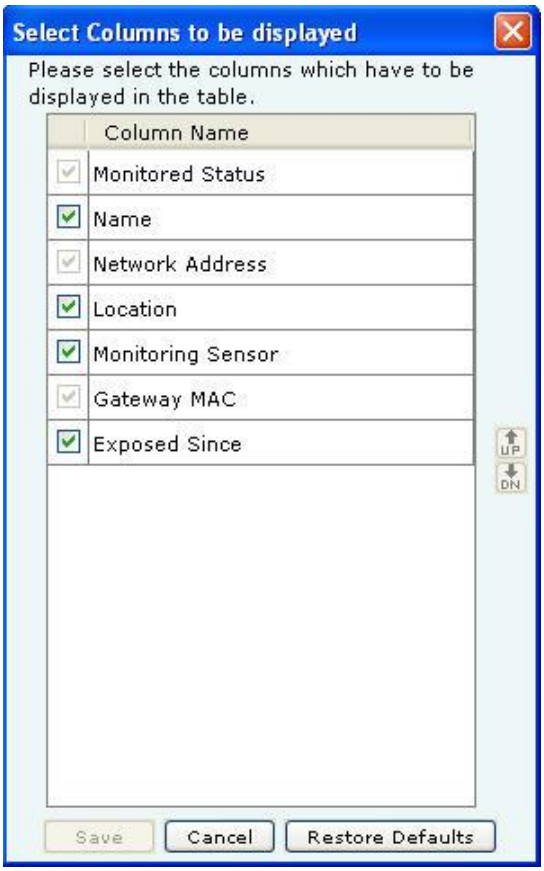


Networks tab

The **Networks** tab shows the following information about the networks detected by the SGE sensors

- **Monitored Status:**specifies whether the network is monitored or unmonitored by SGE sensor. The  icon indicates that the network is monitored. The  icon indicates that the network is unmonitored. This field is not editable.
- **Name:** specifies the network name of the network, by default. This is an editable field and can be changed by the user.
- **Network address:** specifies the network address of the network.
- **Location:** specifies the location of the network.
- **Monitoring sensor:** specifies the sensor name of the sensor that has detected this network.
- **Gateway MAC:** specifies the MAC address of the gateway. This field cannot be deselected.
- **Exposed since:** specifies the date and time of exposure. This field is populated if the network is not being monitored. The date and time when monitoring for the network has stopped, is displayed in this field.

You may configure display columns to view the columns that you want to view. For this, click on the Column Visibility icon. The following window showing the columns available for display and their current selection and display order, is opened.



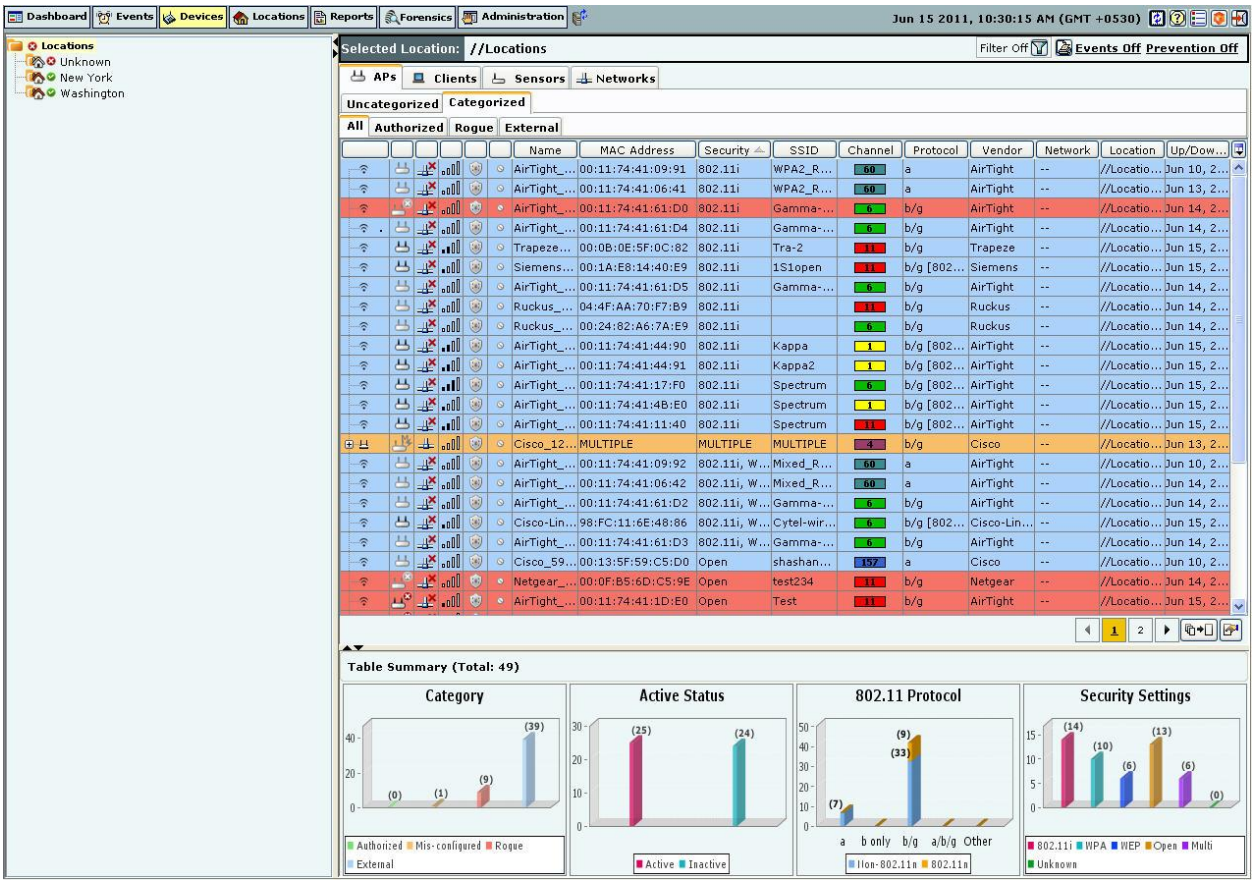
Configure display column list for Networks Tab

You can select/deselect the checkbox next to the column name to view/remove it from Device display. You can change the display order of a column by selecting the column name and moving it up or down with Up/Down buttons. Save the display settings by clicking the **Save** button.

Sorting a Device List

The system enables you to sort a device list so that you can arrange information according to your requirements. Use the following steps to sort a device list:

1. Open a device list as explained in the Viewing APs/Clients List section.
2. Click a column header to sort the list.



Sorted Device List

Location Tagging of a Device or Location Tag Assignment

Device location tagging refers to the process by which a device obtains the label of a location. Tagging is of two types: Automatic and Manual.

Automatic Location Tagging (Auto Location Tagging)

The system automatically assigns a location to a device depending on the Automatic Location Tagging policy selected and the signal strength of the Sensors reporting the device (see Auto Location Tagging). Automatic Location Tagging of a device depends on the location of the Sensors which are able to see the device. If all the Sensors reporting a device are tagged to the **Unknown** location, the device is also tagged to the **Unknown** location.

Manual Location Tagging

You can change the location tag of a device manually in one of the following ways:

- On the **Devices** screen, right-click the device row and select Change Location.
- On the **Locations** screen, place the Authorized AP on the floor map.
- On the **Administration→Global tab→Device Settings→Import Devices** screen, specify the location to which the device must be tagged.

If an AP or Client is manually tagged, the system never attempts to auto-tag it again. To re-enable auto-tagging for that device, you must delete the device and let the system re-discover it.

Working with Devices

This section shows how to access various context-sensitive menus and dialogs associated with the devices in your network.

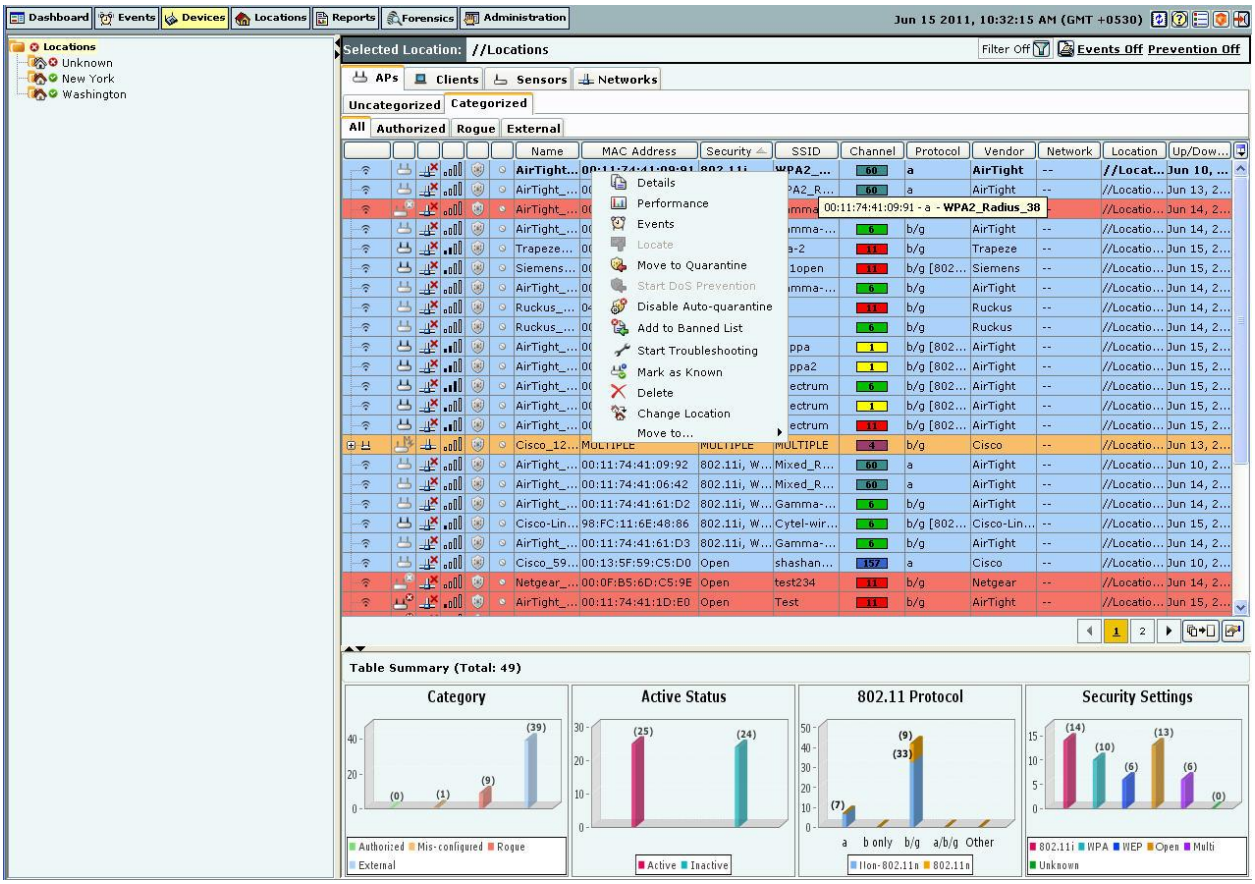
AP Context-Sensitive Menu

APs are wireless devices to which wireless Clients (laptops, PDAs, and so on) connect and communicate with other devices on the Local Area Network (LAN). The context-sensitive menu for APs enables you to:

- View
  - AP Details
  - Events involving the AP
  - AP Performance Charts
- Edit an AP's details
- Locate an AP
- Block Wired Port of an AP
- DoS Prevention of an AP
- Quarantine an AP
- Enable/disable Auto-quarantine on an AP
- Troubleshoot an AP
- Mark an AP as Known
- Delete an AP
- Change
  - AP Location
  - Category
- Move an AP to the following folder
  - Authorized
  - Rogue
  - External

Method for Opening AP Context-Sensitive Menu

To open an AP context-sensitive menu, click the **Devices** tab and then right-click an AP row to open the context-sensitive menu.



AP Context-Sensitive Menu on Devices Screen

Items in the AP Context-Sensitive Menu

The AP context-sensitive menus include the following items.

- **Details:**Opens the **Properties** tab of the **AP Device** dialog, which allows you to:
  - View/Edit the AP's name
  - View/Edit AP's classification
  - View/Edit AP's Device Tag
  - Assign a user-defined location tag so that you can easily locate the AP; the location of a manually tagged AP is shown with an asterisk (*) under the **Location** column
  - Enables you to view Primary details of the AP Devices seeing the AP and recently associated Clients.
- **Performance:** Opens the **Performance** tab of the **AP Device** dialog, which allows you to view performance graphs for the AP.
- **Events:** Opens the **Events** tab of the **AP Device** dialog, which allows you to view events associated with the AP, so that you can take the necessary actions.
- **Locate:** Opens the Locate tab of the AP Device dialog, which allows you view the AP Location (see Fields in the AP Locate Tab).
- **Block Wired Port:** Enables you to disconnect the AP from the network by blocking the wired side Ethernet port to which the AP is connected using integrated Cisco WLSE APIs.
- **Mark Port as Unblocked:** Available only if the wired port of the AP is Blocked, this option enables you to connect the AP to the network by unblocking the wired side Ethernet port to which the AP is connected using integrated Cisco WLSE APIs.
- **Move to Quarantine:** Enables you to block any wireless communication to the AP, that is, quarantine the AP.